DOCUMENT RESUME

ED 154 882 JC 780 296

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TITLE A Comparative Demographic Study of Students Enrolled in Library-Based and in Campus-Based Courses at Black Hawk College.
PUB DATE 78
NOTE 135p.; Ed.D. Dissertation, Nova University

EDRS PRICE MF-$0.83 HC-$7.35 Plus Postage.
DESCRIPTORS Access to Education; Adult Students; Community Colleges; Demography; Educational Background; Educational Objectives; High School Equivalency Programs; Interinstitutional Cooperation; *Junior Colleges; Library Cooperation; Minority Groups; *Nontraditional Students; *Outreach Programs; Part Time Students; *Program Evaluation; *Public Libraries; *Student Characteristics
IDENTIFIERS Black Hawk College IL; Study Unlimited

ABSTRACT

The Study Unlimited Program, developed at Black Hawk College (Illinois) to improve access to postsecondary opportunities for non-traditional students, makes General Education Development Test preparation and college-credit courses available in six area public libraries and in the on-campus Independent Learning Center. All library-based courses parallel existing campus-based courses and most are designed and taught by regular full-time college faculty. The courses are self-paced and offered on a variable entry/exit basis. This study compared random samples of 100 Study Unlimited students and 100 regular college students enrolled during fall 1977 to determine if Study Unlimited was reaching the "new" student population it was intended to serve. The two populations differed significantly in terms of ethnic origin, past level of academic achievement, and major educational goals. Study Unlimited participants were more frequently non-white, had lower past achievement levels, and had more major college goals that were not job-related. However, the groups did not differ significantly in age distribution, full- or part-time status, employment status, high school equivalency completion methods, or previous enrollment at the college, indicating that Study Unlimited was no more effective in reaching the older, employed part-time student than was the regular college program. Recommendations based on study findings focus on greater recruitment efforts, and course additions and changes called for by characteristics of the students. (Author/TR)

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A Comparative Demographic Study of Students Enrolled in Library-Based and in Campus-Based Courses at Black Hawk College

MARY A. STEVENS

A MAJOR APPLIED RESEARCH PROJECT
PRESENTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF EDUCATION

NOVA UNIVERSITY

1978

JC 780296

ACKNOWLEDGEMENTS

My thanks should go to Dr. James L. Wattenbarger and Dr. Leland L. Medsker for their interest in this study, their encouragement, and their advice; to Dr. Robert K. White for his patient good humor throughout three years; and to Nova University for teaching me what the community college is all about.

--Mary A. Stevens

Abstract of a Major Applied Research Project Presented to Nova University in Partial Fulfillment of the Requirements for the Degree of Doctor of Education

A COMPARATIVE DEMOGRAPHIC STUDY OF STUDENTS ENROLLED IN LIBRARY-BASED AND CAMPUS-BASED COURSES AT BLACK HAWK COLLEGE

By

Mary A. Stevens

May, 1978

To increase access and to seek new sources of student population, Black Hawk College, Moline, Illinois, has attempted to develop non-traditional opportunities for "new students," including Study Unlimited--a cooperative program between the college and the River Bend Library System, Coal Valley, Illinois. Chiefly by means of instructional technology, this program makes preparation for the G.E.D. examination and college-credit courses available in six area public libraries and in the Independent Learning Center on campus. All library-based courses parallel existing campus-based courses, and most were designed and are taught by regular full-time faculty at the college. All courses are self-paced and variable-entry. This study made a comparative analysis of students enrolled in college-credit courses in the Study Unlimited program and students enrolled in campus-based college-credit courses during the fall semester of 1977 to determine

whether or not the Study Unlimited program is enrolling students who are "new students."

Nine null hypotheses were tested, each relating to a demographic characteristic of the "new student": age, student status, income level, academic achievement level, method of gaining high school equivalency, newness to the college, and major educational objective.

One hundred students were selected at random from each of the two populations to be compared in the study--the Study Unlimited student population and the general college population--from among those who had enrolled in college-credit courses during the fall semester of 1977. Information relating to the hypotheses was collected from student college admission forms, from student academic records and transcripts, and by a telephone interview of each student. The statistical significance of each null hypothesis was tested by a two-tailed $\bar{x}^2$ test at a critical level of .05. Not all students could be reached for telephone interview, but 77 percent of the Study Unlimited sample was reached and 74 percent of the sample from the general college population. In only a few isolated cases, all other necessary data were available in the student's record.

The two populations studied were found to differ significantly in relation to membership in ethnic and racial groups, past level of academic achievement, and major goal

for attending college. More Study Unlimited students were non-white; more had low levels of past academic achievement; and more had major college goals that were not job-related. Both groups did not differ significantly in relation to age distribution, academic status as either full-time students or part-time, employment status as either full-time or part-time/unemployed, level of family/parental income, method of completing high school equivalency, or whether or not they had ever before enrolled at Black Hawk College.

Based upon these results, this study made specific recommendations of methods to improve Study Unlimited's service to "new students": (1) A greater emphasis should be placed on the recruitment of older, part-time students who are employed full-time. (2) Because Study Unlimited is serving "New Students" of the type identified by Cross, especially members of ethnic/racial minority groups and those with poor records of past academic achievement, major changes must occur in its instructional strategies and course offerings. Specifically included are a course in study skills, a more elementary course in reading skills, and remedial and developmental courses in writing and mathematics. Also included are methods to make the delivery system of the program more personal by continued emphasis upon the importance of part-time academic advisors, provisions for more discussion and participation, the introduction of courses and methods that allow for experiential

learning, and methods to raise students' self-concepts. Also included are review and revision of existing course materials to ensure small modules of instruction with frequent evaluation of students and feedback. [3] A greater emphasis should be placed on recruiting more students from among the pool of individuals who have gained high school equivalency by means of the G.E.D. program. [4] There is a continued need to provide students with information on financial aids and with assistance in seeking them. [5] Additional course offerings from obvious career fields should be made available in the program. [6] The offering of courses in adult continuing and basic education at public libraries participating should be considered. [7] Further studies to note changes in the demographic composition of students and to include information on sex, geographic accessibility to campus, and sociological home background should be made. Future studies should also investigate the students' cognitive style and the reasons for their success or failure in the program.

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I. INTRODUCTION

Background and Significance

The goal of opening access to postsecondary education for previously unserved population groups is not new. Cyril Houle has pointed out that the concept was originally imported to this country in the 1880's from England. Since that time it has been manifested in the establishment of land grant, urban, and general state universities; in the use of off-campus teaching sites; in scheduling of classes at times convenient for off-campus students; and in the use of instruction by correspondence, radio, and television.[1] Significant modifications in existing patterns of postsecondary education to serve adult students were especially common just after World War II with the rush of veterans to college campuses.[2] Another significant event that served to foster the growth of what has come to be called "non-traditional study" was the chartering of England's "Open University" in 1969--an event viewed by its vice chancellor, Sir Walter Perry, as the ultimate result of an increase

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[1]Cyril O. Houle, The External Degree(San Francisco: Jossey-Bass Publishers, 1974), p. 7.

[2]Ibid., p. 10.

in the proportion of those who wished to attend college and in the length of time spent in attendance. As a result, in Perry's view, institutions like the Open University have developed--institutions that have no entrance requirements, are designed for employed adults, and facilitate part-time home study.[1] But, in the United States, the most significant impetus for the development of non-traditional study has come from the recommendations of prestigious study groups and, in part, as a result of projections of enrollment in postsecondary education that strongly suggest the need to attract new students to maintain enrollment levels.

In 1970, a task force headed by Frank Newman and appointed by the U.S. Department of Health, Education, and Welfare, urged the end of the "lock-step" of traditional university life; a merging of academic training and job experience; and provision for off-campus education for those who do not choose to attend college campuses, for women, for those seeking new careers, and for the disadvantaged.[2] The Educational Amendments of 1972 to the Higher Education Act of 1965 require an extension of

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[1]Sir Walter Perry, "A National Commitment: An International Concept," in Designing Diversity '75, proceedings of the 2nd National Conference on Open Learning and Non-Traditional Study, June 17-18, 1975, Washington, D.C.(Lincoln, Nebraska: University of Mid-America, 1975), pp. 12-14.

[2]Frank Newman, chairman, Report on Higher Education, U.S. Department of Health, Education, and Welfare, March, 1971 (Washington: U.S. Government Printing Office, 1971), p. 69.

the services of postsecondary education to previously unserved student groups. The most complete set of recommendations on opening access, however, has been made by the Commission on Non-Traditional Study, sponsored by the College Entrance Examination Board, the Educational Testing Service, and the Carnegie Committee. Chaired by Samuel B. Gould and involving in its work many who have ultimately become leaders in non-traditional study, the Commission met initially in 1971 and published its recommendations through 1975. Included in these were a national charge to broaden access, reshape institutions, and create alternatives. In Diversity by Design of 1973, the Commission concluded that too many people find postsecondary education to be too expensive, too rigid in formal requirements, and inaccessible in time and place.[1] The Commission predicted that education would cease to be viewed as a "single opportunity of a lifetime" and would come to be "the total opportunity for a lifetime."[2]

In 1971, Patricia Cross, a staff member of the Commission, had proposed a definition of those "new students" that expanded access would serve to attract and accommodate. To Cross, "new students" were "those scoring in the lowest third

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[1]Commission on Non-Traditional Study, Diversity by Design(San Francisco: Jossey-Bass Publishers, 1975), p. 19.

[2]Ibid., p. 12.

among national samples of young people on traditional tests of academic ability."[1] More recently, in Accent on Learning, Cross noted the expanded definition of the term "new student" --adults, those from lower socioeconomic levels, members of ethnic minority groups, and women.[2]

In The External Degree, a book sponsored by the Commission, Cyril Houle outlined a major new non-traditional "opportunity"--a new type of degree designed for this new clientele, providing prolonged rather than intensive instruction and suited to "a more mature lifestyle."[3] This degree is characterized by open admissions, part-time enrollments, the use of instructional media, and methods to assess prior, non-sponsored learning and to recognize it by means of college credit. This external degree is aimed at three major groups of new--or previously unserved--students: those who were good students but who lacked the opportunity for or did not take advantage of higher education; those of unusually high ability, especially women and business executives; and those who fall below the

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[1]K. Patricia Cross, Beyond the Open Door[San Francisco: Jossey-Bass Publishers, 1971], p. 13.

[2]K. Patricia Cross, Accent on Learning[San Francisco: Jossey-Bass Publishers, 1976], p. 4.

[3]Houle, pp. 63-64.

usual standards for college admission. Thus, Houle's definition of the "new student" is considerably expanded over the one first proposed by Cross. Houle estimates this group to be large. Presently, there are 79.8 million "would-be learners" in this country and 32.1 million "learners," those who are currently involved in receiving instruction.[1]

Interest in this group of new students as defined by Houle is the result not only of national directives but also of a search for new clientele at a time of a predicted stabilization of enrollment in postsecondary education. In 1971, in its New Students and New Places, the Carnegie Commission issued enrollment projections for postsecondary education to the year 2000. While, from 1960 to 1970, enrollment had increased by 124 percent over that of the previous decade, it is predicted to increase by 59 percent from 1970 to 1979, to decrease by 1 percent from 1980 to 1990, and possibly to increase once again by 30 percent from 1990 to 2000.[2] These predictions have been confirmed by the U.S. Department of Health, Education, and Welfare in The Condition of Education, 1976 edition. The number of traditionally-aged community college

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[1]Houle, pp. 80-86.

[2]Carnegie Commission on Higher Education, New Students and New Places(New York: McGraw-Hill Book Company, 1971), p. 1.

students--the 18- to 21-year-olds--will increase until 1979 and then begin to decline.[1] However, this study notes since 1957 a steady increase in participation of the adult population and foresees a continued growth for postsecondary education because of this increase in the number of adult students.[2]

Like many other community colleges, Black Hawk College can anticipate a similar stabilization of or even a decline in enrollment in the 1980's. In 1977, for the second year, fall enrollment was down, and once again during the spring semester, enrollment fell from previous levels. Although the cause of these declines may be in part good local employment opportunities for recent high school graduates, such enrollment trends, however, can be predicted by population projections for the area unless new student populations are attracted into postsecondary education by the college. A study of data from the 1970 U.S. Census for the three Illinois counties comprising the majority of the Black Hawk College district shows that between now and 1989, the Black Hawk College district can expect a slight increase in residents of traditional community college age--less than 5 percent. This increase is in contrast

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[1]Mary A. Galloday, The Condition of Education, 1976 edition(Washington, D.C.: U.S. Government Printing Office, 1976), p. 10.

[2]Ibid., p. 11.

to an increase of approximately 21.4 percent between 1970 and 1976. Of course, projections and comparisons based upon these data only do not include adjustments for increases because of migrations of new residents into the district. Nevertheless, it seems that the sources for growth in enrollment from among those of traditional community college age will increase only slightly between now and the late 1980's and can not be expected to increase at nearly the same rapid rate as in the past. Clearly, if the college is to continue to grow, it must either attract a larger percentage of those who are of traditional community college age, probably many from the lowest third of their high school graduating classes, or it must attract a larger percentage of the adult population --those above traditional community college age, or it must attract more from both groups. In all cases, these sources are from among those termed "new students."[1]

To increase access to higher education in the interest of greater social justice and because of national directives and to seek new sources of student populations, Black Hawk College for some time has been attempting to remove those barriers of rigidity of formal requirements and inaccessibility

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[1]Mary A. Stevens, The Effectiveness of "Study Unlimited" in Serving New Student Populations in the Community(U.S. Educational Resources Information Center), ERIC Document ED 131 884, November, 1976, p. 14.

in terms of time and place that were delineated by the Commission on Non-Traditional Study in Diversity by Design. Up to July 1, 1977, the college served as an open testing center for the College Level Examination Program(CLEP) and it still accepts CLEP credit; since the beginning, it has been a member of the Cooperative Assessment of Experiential Learning (CAEL) Assembly, or, more recently, the Cooperative for the Advancement of Experiential Learning. During the 1972-73 academic year, the college initiated its liberal studies associate degree program "to provide the mature student with the opportunity to deviate from the structured programs of the College"[1] and "to provide curricula or courses for identifiable populations not previously served by the College."[2] This A.L.S. degree recognizes and facilitates a student's receiving credit for prior learning in order to provide "entry into the academic world to those who previously felt themselves excluded from it."[3]

In addition, the college seeks to serve the "New Student" by means of programs designed to make the college more

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[1] Black Hawk College Self-Study Report, prepared for the North Central Association of Colleges and Secondary Schools, Moline, Illinois, December 2, 1974, p. 53.

[2] Ibid., p. 54.

[3] Ibid., p. 120.

accessible in terms of location and time. Many college courses are offered on an individualized, variable entry/exit basis "to provide students with a more flexible learning experience,"[1] or, in short, to attempt to break through inaccessibility in terms of time to accommodate more readily the part-time student, the full-time worker, and the individual with shifting work hours. Also, since the spring of 1974, the college has offered courses over cable television; it has offered for college credit those courses available over open-air television broadcast, like "The Adams Chronicle"; and it has participated in all the national "Courses by Newspaper." During the 1977-78 academic year, the college will serve as a model for the implementation of a community forum focused upon this year's two "Courses by Newspaper," under a grant from the American Association of Community and Junior Colleges with funds provided by the National Endowment for the Humanities. In April, 1977, the college unified and recognized many of these programs in the creation of a new fourth division in the university parallel programs--the division of interdisciplinary and alternative study.

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[1] Black Hawk College Self-Study Report, prepared for the North Central Association of Colleges and Secondary Schools, p. 118.

On June 1, 1975, Black Hawk College entered a cooperative program--called "Study Unlimited"--with the River Bend Library System, the local state library district, to offer college-credit courses and preparation for the G.E.D. examination in area public libraries. The program's goal is "to provide maximum access and scheduling flexibility to new students, especially to part-time students over 25."[1] It also seeks to provide "maximum access through its placement of courses in area public libraries," close to students' homes or jobs.[2] All courses are self-paced and offered on a variable entry/exit basis in six public libraries distributed throughout much of the area served by the Quad-Cities Campus and in the Learning Resource Center on campus. Thus, this program seeks specifically to enroll the "new student" by removing the barriers of time and location. It does so, first of all, by the use of educational technology, which Virginia Trotter has called "one way of opening doors for new sorts of student populations."[3] All courses are offered

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[1]Charles E. Laws, Dean of Liberal Studies, Annual Report, 1975-76, Black Hawk College, Moline, Illinois. [Mimeographed.]

[2]Ibid.

[3]Virginia Trotter, "Communications Technology: Extending the Reach of Universities to People," in Designing Diversity '75, p. 57.

in formats of videocassette, audiocassette, multi-media, or printed materials for home study. In January, 1977, Study Unlimited introduced "Tak-Hom-A-Kourse," through which students can purchase all materials for home study of courses in printed form or can rent audiocassette courses for home use. They can order these materials at library centers or pick them up on campus, and they take examinations and hand in work at library centers. Second, Study Unlimited seeks to remove barriers of time and location by using the resources of the local public library, called by the Commission on Non-Traditional Study "a major education center or base for the learning experiences" of new student populations.[1]

For the most part, Study Unlimited offers traditional college courses in a non-traditional way. Thus, with the possible exception of its course to prepare for the G.E.D. examination, it cannot be said to serve nor does it aim to serve the "New Student" as defined by Cross--the low academic achiever. Instead, it seeks to serve the "New Student" who is an adult, a part-time student, a full-time owrker, a married women seeking cultural enrichment or job training, or a married man seeking employment advancement. It aims to attract

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[1]Samuel B. Gould and K. Patricia Cross, editors, Explorations in Non-Traditional Study[San Francisco: Jossey-Bass Publishers, 1972], p. 26.

students who are new in the sense that they have never before attended Black Hawk College--the previously unserved populations identified in the literature on nontraditional study. Because they did not aspire to college as often in the past as others, this group can be expected to include more women and more members of ethnic/racial minority groups than the traditional college population.

A demographic study completed in November, 1976, compared the Study Unlimited student population to the general college population and to the population of the college district to evaluate the program's effectiveness in serving new student populations in the community. It found that over 82 percent of students enrolled in Study Unlimited were part-time students; over 65 percent were employed; over 61 percent were married; over 60 percent were aged 25 or older; and over 46 percent were new to Black Hawk College--that is, had never before enrolled. It concluded that students enrolled in Study Unlimited were older than traditional community college students and included more part-time students. These students closely resembled the college district population in relation to distribution by sex, employment status, and marital status. The study concluded that an off-campus program that seeks to offer college courses in locations close to the student's home or place of employment and to provide flexible

scheduling by the use of instructional media can serve student populations previously unserved by the college and that, if the college wishes to increase enrollments from such students, it should expand existing programs of this type or create new ones.[1]

Black Hawk College established and has been expanding its opportunities for non-traditional study at a time of severe economic constraints resulting from changing and disadvantageous state funding formulas, inflation, declining enrollments in courses that have generated excess revenues in the past to sustain more expensive programs, and the recent defeat of a referendum to increase the local property tax levy. The college has large budget deficits, and, if another referendum is not successful, it can be expected that existing programs will be eliminated. At such a time, a study of existing programs is especially important for two reasons: (1) to serve to provide data and results to determine whether or not existing programs are fulfilling their missions and (2) to provide the basis for planning that will ensure a program's continued success.

Clearly, the Study Unlimited program requires such continuing evaluation. First of all, it is necessary to determine whether or not the program is operating so that its objectives are being met. Second, it is especially necessary in a time

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[1]Stevens, p. 53.

of limited college resources to determine whether or not the program should be continued. Third, it is necessary at a time of limited resources to determine whether or not existing funds available to the program are being used in the most effective way. And, finally, it can be expected to provide direction for improvement in a new program. Thus, the primary purpose of this study is to conduct such evaluation in relation to the program's two major objectives--to attract new clientele to the college and to provide those services that this clientele most needs. This study once again characterizes the Study Unlimited student population by a comparison to the general college population on the basis of demographic characteristics, but it includes in its analysis important characteristics not previously surveyed. By doing so, this study determines whether or not the program is fulfilling one of its two major missions--attracting new students to Black Hawk College. Additionally, by delineating significant demographic characteristics of the Study Unlimited student population as compared with the general college population, it provides information for use in future planning to ensure the program's continued success by providing services that this clientele especially needs--the second major objective of the Study Unlimited program.

Research Questions

In 1950, Ralph Tyler posited four questions that he believed any educational program should answer. These were as follows:

1. Why? There must be needs that justify the existence of a program.
2. What? The program must have objectives that ensure that it serves these needs.
3. How? The program must function in such a way that it meets its objectives.
4. How Will You Know? The program must gather that information that will allow it to determine whether or not it is functioning in this way.

Tyler's approach has become well-known, and, more recently, it has been reinforced by demands for accountability that require the formulation of objectives and evaluation to demonstrate that a program is accomplishing them.[2] Tyler's influence is also reflected in the development and widespread use in postsecondary education of management-by-objectives (MBO), requiring the setting of objectives and an evaluation

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[1]Cited by John Mordechai Gottman and Robert Earl Clasen, Evaluation in Education: A Practitioner's Guide(Ithaca, Illinois: F.E. Peacock Publishers, Inc., 1972), p. 9.

[2]Paul Dressel, Handbook of Academic Evaluation(San Francisco: Jossey-Bass Publishers, Inc., 1972), p. 27.

of their attainment at all levels of an institution.[1]

Clearly, evaluation of the type suggested by Tyler can be both formative and summative--formative in that it can be useful in the development of the program and summative in that it can assess an already developed program to determine whether or not it should be continued.[2] Fincher notes a growing interest in formative evaluation--that which assists in making decisions, rather than that which leads to a conclusion.[3] He quotes Carol Weiss' statement that the purpose of formative evluation is to "measure the effects of a program against the goals it sets out to accomplish as a means of contributing to decision making about the program and improving future programing."[4]

This comparative study of student characteristics is based upon Tyler's four-step process. Additionally, it is

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[1]Dressel, pp. 98-99.

[2]Scarvia B. Anderson, Samuel Ball, Richard T. Murphy, and Associates, Encyclopedia of Educational Evaluation (San Francisco: Jossey-Bass Publishers, 1975), p. 406.

[3]Cameron Fincher, "Program Evaluation: Approaches," in Tomorrow's Imperatives Today, ed. by Robert G. Cope[proceedings of the 13th Annual Forum, the Association for Institutional Reserach, Vancouver, British Columbia, 1973), p. 30.

[4]Ibid.

formative in its emphasis upon the value of such evaluation to decision-making in relation to the development of the program, and summative in that it serves to assess an already developed program to determine whether or not it should be continued. To do so, this study must, first of all, determine those needs that the program was established to meet. Unfortunately, like many new programs in community colleges, Study Unlimited was not preceded by an actual needs study, although it was originated to serve those needs that national studies perceived: (1) a need among those adults previously unserved by higher education to receive its services and credentials, (2) a need among those adults unable to attend traditional campus-based classes for access to postsecondary education, and (3) a need within the institution to attract new clientele to its already developed programs. These needs have been clearly identified by national directives and population projections and were the primary needs that Study Unlimited was established to meet.

Consistent with these perceived needs, each year, as a part of the college-wide management-by-objectives system, the program has established objectives that serve to help it meet these perceived needs, and subsequently an annual report on the attainment of these objectives by the program has been made. These objectives and reports provide further interpretations of the goals of the program and background for a

program evaluation. They include the following: (1) numerical goals for enrollments from new students--those never before enrolled at Black Hawk College, (2) numerical goals for total semester hours of enrollment, (3) goals for total numbers of courses offered, and (4) goals concerning services provided students--academic advisement, study skills training, and career information.

These goals suggest criteria to be used for evaluation--Tyler's third step. Additional criteria can be established for the program based upon a review of the literature dealing with non-traditional study.

And, finally, based upon needs, objectives, and criteria, information must be collected and analyzed to determine whether or not Study Unlimited is functioning in such a way as to meet its objectives. What this data should be and the method for gathering and analyzing it are also suggested by literature dealing with non-traditional study.

Although Tyler does not add a fifth step, one seems to be required if this comparative study is to be used for decision-making--an interpretation of the results of the study that will lead to two types of recommendations: (1) at this time, a summative evaluation of the program, which has now operated for two years, to determine whether or not it

should be continued and (2) a formative evaluation of the program to determine those changes necessary so that it may better meet its objectives.

Of further assistance in the design of such a study, especially in relation to Tyler's second and third steps, is the rather large body of literature dealing specifically with the evaluation of non-traditional study. This literature also provides the basis for a refinement of the comparative study. A sampling of it, first of all, serves to suggest that evaluation is of critical importance to any educational program that represents a major academic change or that is new and not well-established. Martorana and Kuhns recently concluded in Managing Academic Change:

> The evidence from the case studies in this volume demonstrates that academic innovation too frequently is planned on the basis of guesswork and hunch and that provision seldom is made for evaluating the results of the change on more than an informal assessment.[1]

Alan Knox cites additional special reasons for the continuing evaluation of especially non-traditional programs: whereas traditional programs are well-established, well-accepted, and able to utilize a considerable accumulated body of information for evaluation, non-traditional and

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[1]S.V. Martorana and Eileen Kuhns, Managing Academic Change(San Francisco: Jossey-Bass Publishers, 1975), p. 161.

open-learning programs must often justify their existence, especially in competition for limited funds, with other programs within an institution. Additionally, because many non-traditional programs seek to serve an entirely new clientele, to be responsive to its needs, these programs must provide for systematic feedback, evaluation, and modification as necessary.[1] As a newly-established non-traditional program, Study Unlimited is in need of such evaluation.

Stephen Smith notes that evaluation of a non-traditional program can be either "learner-focused" or "program-focused." Learner-focused evaluation centers on providing curricula and services to meet students' needs and interests; program-focused, on the program's cost-effectiveness and on those other parts of the program--including facilities, staff, and finances--that are essential to the achievement of program outcomes.[2] Because of difficulties in assigning costs to programs and lack of necessary financial resources to implement the Resource Requirements Prediction Model(RRPM), a college goal for several years, the college's financial data do not provide a good comparative basis for a cost-effectiveness study, and basic

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[1]Alan Knox, "Program Evaluation: Internal and External Evaluation Procedures and Benefits," in Forum '76, conference proceedings of the Third National Conference on Open Learning and Nontraditional Study, June 15-17, 1976 (Lincoln, Nebraska, University of Mid-America, 1976), p. 111.

[2]Stephen Smith, "Program Evaluation, Internal and External Evaluation Procedures and Benefits," in Forum '76, p. 117.

data for such a study are not available at Black Hawk College. Thus, an evaluation of Study Unlimited must focus on the learner and on those parts of the program and its processes that do not relate to cost.

Second, the literature on non-traditional study provides goals, criteria, and procedures for evaluation that are additional to those that have been used up to now in evaluations of Study Unlimited. Criteria proposed by Knoell and McIntyre as they suggest ways to analyze a program's accessability are especially useful to this study. First, they state that programs must provide access to the college to various socioeconomic and racial/ethnic groups and subgroups in the community. Second, they list specific barriers to postsecondary education that they have identified: (1) financial; (2) individual, including especially low motivation and low academic preparation and aptitude; (3) geographic; (4) institutional,including admission requirements, registration procedures, exclusively traditional program and course offerings and cultural and racial biases on the part of faculty and staff.[1] Of course, traditionally, the community college has aimed to set aside all such barriers by its open-door

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[1]Dorothy Knoell and Charles McIntyre, Planning Colleges for the Community(San Francisco: Jossey-Bass Publishers, 1974), pp. 74-75.

policy and its wide curricular offerings. Specifically, Study Unlimited has provided off-campus and simplified registration and locaticns even closer to students' homes than provided by the campus. However, the community college has not been entirely successful in setting aside all such barriers, especially in relation to financial and individual obstacles to enrollment.

Once again, with this second recommendation by Knoell and McIntyre, a demographic study of students enrolled in a new program can serve as the basis for an evaluation of that program's success in removing traditional barriers for new students. To do so, this study involved a comparison of the student population in the new program and the general college population in relation to those characteristics that seem best to characterize the target student population.

Hypotheses

This study characterized the Study Unlimited student population demographically by a comparison to the general college population on the basis of selected characteristics in order to evaluate the program's success in attracting new students to the college and in removing those barriers that have traditionally denied access to such students. Additionally, by delineating significant demographic characteristics of the Study Unlimited student population as compared with the general college population, this study provided information for use in future planning to ensure the program's continued success by providing services that this identified clientele especially needs. In doing so, this comparative study tested the following null hypotheses:

H_o^1: The age distribution of students enrolled in college-credit courses in Study Unlimited is no different than the age distribution of students in the general college population.

H_o^2: The proportion of part-time students enrolled in college-credit courses in Study Unlimited is no greater than the proportion of similar students in the general college population.

H_o^3: The distribution of students enrolled in college-credit courses according to membership in ethnic/

racial groups and sub-groups is no different than the distribution of students in the general college population.

H_o^4: The proportion of students enrolled in college-credit courses in Study Unlimited who are gainfully employed full-time is no greater than the proportion of students in the general college population.

H_o^5: The proportion of students enrolled in college-credit courses in Study Unlimited who are from families with a gross annual parental and/or family income of $10,000 or less is no greater than the proportion of students in the general college population.

H_o^6: The proportion of students enrolled in college-credit courses in Study Unlimited who scored in the lowest third on traditional tests of academic ability or who were in the lowest third of their high school graduating classes or both is no greater than the proportion of students in the general college population.

H_o^7: The proportion of students enrolled in college-credit courses in Study Unlimited who completed high school by means of the G.E.D. examination is no greater than the proportion of similar students in the general college population.

H_o^8: The proportion of students who, upon their initial enrollments in Study Unlimited, had never before

attended Black Hawk College is no greater than the proportion of students in the general college population.

H_o^9: The proportion of students enrolled in college-credit courses in Study Unlimited who have as a major goal job upgrading and advancement, improved skills in present employment, or entry into the job market in a field that they have clearly established is no greater than the proportion of students in the general college population.

Definition of Terms

In this study the following definitions of key terms applied:

Academic Underachievers--Those who score in the lowest third on traditional tests of academic achievement or who were in the lowest third of their high school graduating classes or both.

Full-Time Employment--The condition of working for a salary or fees thirty-five hours a week or more at one or more jobs for eight or more months each year.

General College Population--All students who were enrolled in college-credit courses at Black Hawk College in the fall semester of 1977.

Gross Annual Parental and/or Family Income--Gross earnings reported for the calendar year of 1976 for salaried workers or net income as reported on Schedule C in the 1976 Federal Income Tax Report for the self-employed or on Schedule F, for the farmer. For dependent students, parental income was used; for independent students who were not married, individual income was used; for independent students who were married the income earned by both husband and wife was used.

New Students--In Accent on Learning, Cross provides one definition of such students:

> The New Students described in Beyond the Open Door [Cross, 1971] are "new" to higher education because only in an age of open admissions would they be considered "college material." They were labeled New Students [initial letters capitalized] if they ranked in the lowest third of the high school graduates on traditional tests of academic achievement. In the years since Beyond the Open Door was published, people have spoken of new students--and more recently of non-traditional students--as all learners who were previously under-represented in higher education: adults, students from lower socio-economic levels, ethnic minorities, and women.[1]

Additionally, such "new students" have been characterized by John Valley as preparing for a second career, independent and self-supporting, limited in mobility to a local area, with varied educational objectives[career, leisure, self-development, etc.] and with diverse employment backgrounds.[2]

Part-Time Students--Students enrolled for eleven or fewer college-credit hours per semester. Full-time students are those enrolled for twelve or more credit hours per semester.

Racial/Ethnic Minority Groups--Designated within this study in the same way as in all college reporting, both internal and external: Blacks, Orientals, Caucasian, American Indians, Hispanics, and "others."

Study Unlimited Student Population--All students enrolled in

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[1]Cross, Accent on Learning, p. 4.

[2]Cited by I. Bruce Hamilton, The Third Century, Post-secondary Planning for the Nontraditional Learner, a report prepared for the Higher Edcuation Facilities Commission of the State of Iowa by the Office of New Degree Programs[Princeton, N.J.: Educational Testing Service, May, 1976], pp. 16-17.

one or more college-credit courses in the Study Unlimited program from August 22, 1977, to November 15, 1977. August 22 was the beginning of the fall semester, and November 15 was the date on which the random sample was taken.

Assumptions and Limitations

The results of this study were based upon the following assumptions: that the information reported by students on college admissions forms is correct, that students responded honestly and accurately to questions during telephone interviews and did not give answers that they assumed the interviewer would prefer to hear, that the random sampling technique used provided representative groups, and that information from those could not be contacted for telephone interviews would not have significantly affected the results.

The results and conclusions of this study were subject to the following limitations. In a time-series design such as this study employed, it is impossible to project the findings beyond the time period studied--in this case, the fall semester of 1977. The demographic characteristics of both groups might be significantly different at another time. Second, in such a design, it is not possible to project the findings beyond the setting in which the study was made--Black Hawk College. And, finally, this study only described; it was not possible to assign causes to the results except by conjecture.

II. REVIEW OF RELATED LITERATURE

So much has been written on non-traditional education that it is necessary to limit this review to those areas that most closely relate to this study. These are traditional barriers to access to postsecondary education, the best methods to remove these barriers, the demographic characteristics of new students, and the best methods to respond to their special needs.

K. Patricia Cross and J. Quentin Jones succinctly focus upon three characteristics of traditional postsecondary education that create barriers to access: the concept that learning "requires physical presence in a classroom"; the concept of residency requirements, or that a certain number of credits must be accumulated at one institution to fulfill degree requirements; and the concept that education must be a full-time occupation.[1] The concept that to learn one must be physically present in a classroom establishes geographical barriers, which serve to deny the greatest number. Denied especially are those living in rural areas, the young

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[1] K. Patricia Cross and J. Quentin Jones, "Problems of Access," in Explorations in Non-Traditional Study, ed. by Gould and Cross, p. 43.

mother confined to home, the physically handicapped, and prison inmates.[1] Degree residency requirements create a special barrier for servicemen and other military personnel, married women who attend college part-time and who must then shift geographical locations as their husbands move between jobs, and those who have studied in non-accredited institutions or whose credits are "too old."[2] Scheduling barriers resulting from the concept that learning must be a full-time job especially affect the full-time employee and married women. Also resulting from this concept are financial barriers created by disadvantageous tuition rates for part-time students.[3]

Dorothy Knoell and Charles McIntyre have done detailed work to analyze less obvious barriers to access, some of which have already been cited in this study. A more complete listing of their findings is as follows: (1) financial--direct costs and related constraints, including foregone personal income and reduced ability to contribute to family support; (2) individual--motivational constraints(including a

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[1]Cross and Jones, pp. 43-44.

[2]Ibid., pp. 45-47.

[3]Ibid., p. 48.

family background without the expectancy for college attendance, poor self-concept, and poor advisement), academic constraints(including poor previous academic preparation and performance), and other individual constraints(including poor health care and nutrition and a social and/or psychological distance of home environment from campus environment); (3) geographical barriers--including even "perceived" dangers of travel at certain times of the day; (4) institutional barriers--including preadmissions testing, complex admission procedures, the difficult reading level of instructions and forms; and (5) attendance constraints--including prerequisites, high student-teacher ratios, inconvenient class scheduling, exclusively traditional course offerings, and the cultural and racial biases on the part of college personnel.[1]

Carp, Peterson, and Roelfs surveyed adults in relation to postsecondary education. They found that cost was the greatest barrier, especially for adults under age 35. Other major barriers in rank order were not enough time, especially to attend full-time; home or job responsibilities, especially for whites; feelings of being too old or not having enough energy, especially for older women; low academic achievement

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[1]Knoell and McIntyre, pp. 74-75.

in the past or a failure to meet entrance requirements, especially for Blacks and the young; lack of child care, information, transportation, conveniently scheduled classes, or a place to study; and "too much red tape in getting enrolled." Carp, Peterson, and Roelfs conclude that, after cost, the greatest barrier related to factors of time.[1]

The Commission on Non-Traditional Study specifically addressed these barriers in a number of its recommendations: financial support must be available to all according to their needs;[2] programs emphasizing "diverse and flexible arrangements for study" must be available;[3] convenient community counseling and information centers must be established;[4] there must be "continued experimentation with forms of non-traditional study which minimize the traditional rigidities of campus life," including residency requirements, systems of accounting for credits, and prescribed years of study;[5]

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[1]Abraham Carp, Richard Peterson, and Pamela Roelfs, "Adult Learning Interests and Experiences," in Planning Non-Traditional Programs, ed. by K. Patricia Cross, John R. Valley and Associates(San Francisco: Jossey-Bass Publishers, 1975), pp. 46-48.

[2]Commission on Non-Traditional Study, Diversity by Design, p. 24.

[3]Ibid., p. 28.

[4]Ibid., p. 36.

[5]Ibid., p. 49.

"the public library should be strengthened to become a far more powerful instrument for non-traditional education";[1] instructional technology should be carefully reexamined for use in non-traditional study;[2] and cable television should be evaluated as a delivery system.[3]

In 1973, Ruyle and Geiselman completed a study to determine the actual extent of institutional participation in non-traditional programs designed to implement such recommendations and to remove barriers. They found that three out of every four American colleges and universities surveyed allow students to earn degrees entirely by part-time attendance; only occasionally do tuition rates discriminate against part-time students; in more than one-half of the institutions, part-time students are eligible for some sort of financial aid; only about 10 percent offer child care facilities and most charge for the service; less than 10 percent have special counseling and advisement services for adults; and access to campus services on evenings and weekends is generally limited.[4] Ruyle and Geiselman report that institutions are considering the possibilities of granting credit

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[1] Diversity by Design, p. 82.

[2] Ibid., p. 96.

[3] Ibid., p. 102.

[4] Janet Ruyle and Lucy Ann Geiselman, "Non-Traditional Opportunities and Programs," in Planning Non-Traditional Programs, pp. 56-59.

for past work experience and non-course work, including cooperative work experience, volunteer work, and participation in activities such as community theater. At about two-thirds of the institutions surveyed, students could earn some credit toward a degree by scores in national testing programs.[1] In about 35 percent of the institutions, credit recommendations made by the American Council on Education for military training were followed.[2]

In surveying non-traditional opportunities and programs, Ruyle and Geiselman found four major characteristics in which they were not conventional: (1) type of student enrolled, such as working adults, housewives, and those motivated to study independently; (2) location of learning experience--regional center, field study, home, and off-campus; (3) method of instruction--such as non-lecture or non-classroom; and (4) the content of the programs.[3] They also report the extent of new experiments in time, place, instruction, and content of programs to relax rigidities. About 47 percent of institutions surveyed reported at least one non-traditional program--including those utilizing off-campus course locations,

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[1]Ruyle and Geiselman, pp. 61-62.

[2]Ibid., p. 61

[3]Ibid., pp. 67-68.

non-traditional curricula, individualized or programmed methods, and off-campus learning opportunities, such as field trips and internships.[1]

Of the 641 programs identified by Ruyle and Geiselman as non-traditional in some way from among the 1185 institutions surveyed, 70 percent were designed for non-traditional students; 67 percent were in non-traditional locations; 57 percent used non-traditional methods; and 48 percent offered non-traditional content. Only seven percent of those with a traditional content served new students in unusual locations by means of new instructional methods and delivery.[2] In this seven percent, both tape cassettes and programmed instruction were used in 35 percent of the cases, the largest single group. Of the fifteen programs discovered to use five or more technological aids, most had a liberal studies emphasis and only one-half offered a curriculum with any sort of focus on occupational areas.[3]

Ruyle and Geiselman found three options most common in programs using instructional technology: (1) student self-pacing, (2) variable entry,or the opportunity for students to begin a program at any time rather than at the

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[1]Ruyle and Geiselman, pp. 68-71.

[2]Ibid., pp. 71-72.

[3]Ibid., pp. 78-79.

start of an academic term, and (3) use of learning contracts between students and faculty.[1]

At the foundation of such attempts to remove traditional barriers and decisions concerning the methods best to do so are the many studies of the distinguishing demographic characteristics of "new students," for these characteristics suggest the approaches that are necessary and that promise the most success. Definitions of "new students" vary greatly as do the listings of their major characteristics.

Perhaps one of the most definitive and influential books on the "new student" has been Cross' Beyond the Open Door. She begins by delineating three major philosophical stances in relation to the question, "Who should go to college?" These are the aristocratic, holding that higher education is a privilege to which one is born; the meritocratic, insisting that college admissions should be based upon academic ability and a willingness to study hard; and the egalitarian, emphasizing the importance of democratizing higher education so that it is within the reach of all. Cross insists that, if postsecondary education is to be opened to

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[1]Ruyle and Geiselman, p. 79.

all, educational systems must be designed to accommodate the needs of the "new students."[1]

Cross cites studies by Sewall and Shah and by Hilton, which, although using different samples, still reveal the same patterns of individual barriers to access to higher education. Both studies isolated these as low socioeconomic status, low tested academic aptitude, and membership in the female sex. Data analyzed in these two studies did not allow conclusions relating to membership in ethnic minority groups, but Cross adds this as a fourth.[2] She emphasizes that access programs designed to remove barriers for these four groups will bring into postsecondary education increasing numbers of students of low ability and that traditional college programs are not prepared to deal with the learning needs of such students.[3] The data used by Cross in Beyond the Open Door suggest that these students will be mostly Caucasian and from families whose parents have never attended college and for whom such aspirations are new. Believing that college credentials will result in a better job and a better life than their parents had, they

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[1]Cross, Beyond the Open Door, pp. 1-5.

[2]Ibid., p. 6.

[3]Ibid., p. 11.

will usually enter public community colleges or vocational schools because of the general rising educational aspirations of our population.[1] Because many of these students will have been in the lower third of their high school classes, they will have been conditioned to fail academically. In developing programs for such students, postsecondary education has two challenges: creating a learning environment in such a way that students used to failure will try once again and finding ways to reward their efforts.[2]

More recently in Accent on Learning, Cross herself comments on descriptions of "new students" that have developed since Beyond the Open Door. She acknowledges that today's new students-or nontraditional students--are "all learners who were previously underrepresented in higher education: adults, students from lower socioeconomic levels, ethnic minorities, and women."[3] Clearly the emphasis in definition now is upon the condition in which new students are individuals who would like to learn but who are not presently being served by postsecondary education.

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[1]Cross, Beyond the Open Door, p. 15.

[2]Ibid., p. 29.

[3]Cross, Accent on Learning, p. 4.

Much literature on non-traditional study deals with the demographic characteristics of these new students--variously called new target populations, would-be learners, and new clientele. Ruyle and Geiselman found that most non-traditional programs were designed for the following types of new students: housewives and working adults[53%], special occupational groups[48%], independent learners of all ages[35%], the unemployed and the economically disadvantaged[30%], people confined or beyond commuting distance [21%], military personnel[16%], and other non-traditional students, such as the handicapped and the elderly[6%].[1]

Carp, Peterson, and Roelfs found that demographically these "would-be learners"--or those not presently students but who reported an interest in some sort of further learning or education--had the following characteristics: 54% were women; 20% were housewives; 65% were aged 30 or above; 88% were white; 78% were married; 38% were high school graduates; 28% were high school dropouts; 13% were college graduates; and 15% were college dropouts. They also found that 22% were employed in unskilled or semi-skilled occupations; 19% were employed in sales and clerical work; 15% were employed in skilled occupations; 55% were employed

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[1]Ruyle and Geiselman, p. 73.

full-time; 33% were unemployed; and 78% lived in urban areas.[1]

In The External Degree, Houle discusses what he terms "potential clientele" for non-traditional degrees. He sees the greatest need to be among

> a large number of adults who were born too early to take advantage of the widespread opportunities available to younger men and women through the expansion of facilities of higher learning. It is these adults, now caught up in the pressures and concerns of mature life, who make up the largest potential clientele for the external degree....[2]

Of course, this group is very close to the "new student" in the minds of many. Houle isolated, as a first potential clientele, the college drop-out, a most likely candidate for an external degree. Studying population data, he determined that, in 1971, 11,782,000 adults 25 years of age or over had begun college but had not gone beyond the third year. In addition, he sees a future potential clientele among older adults who were high school dropouts and who gained high school equivalency by means of the G.E.D. examination. In 1971, the Bureau of Census estimated that 38,029,000 adults 25 years of age or older had not completed

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[1]Carp, Peterson, and Roelfs, pp. 15-16.

[2]Houle, p. 46.

high school. It predicted that by 1990 this number would increase to 58,965,000.[1] Houle cites studies suggesting that the older student who completes high school by means of the G.E.D. examination and then enters college has little difficulty adjusting and does well. Also, he agrees with others that this group constitutes a major potential clientele for the external degree because of goals and needs. Potential clientele of these two types are what Houle labels "adult clientele."[2]

Houle also designates a "youth clientele" for external degree programs--young people "who, if they had the chance, would prefer an external degree to an internal one or for whom the external degree is the only feasible one."[3] There is no meaningful estimate of the size of this potential group.[4]

More recently, other descriptions of this new clientele have been made. A 1975 report on alternative education for adults in California suggests those groups of adults not presently well-served by postsecondary education: women,

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[1]Houle, p. 56.

[2]Ibid., p. 58.

[3]Ibid., p. 60.

[4]Ibid., p. 61.

members of minority groups, the less-educated, the blue-collar worker and the poor.[1]

A 1976 report prepared by the Office of New Degree Programs for Iowa's Higher Education Facilities Commission found this group to be aged 25 to 45, "productive, responsible, beset by frustration and barriers, but looking for new ways to better themselves."[2] This report cites the following major differences between typical students and non-traditional learners: non-traditional learners are older, from 20 to 80; they plan to learn over a longer span of years, potentially from 40 to 50 years; they seek preparation for a second or a concluding career; they are independent and self-supporting; their educational mobility is limited to a local area; their educational objectives are varied, including career, leisure, and self-development; their employment background is frequently rich and diverse; they prefer independent learning modes; and their previous level of educational attainment varies from less than high school through postdoctoral work.[2]

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[1]Richard E. Peterson and JB Lon Hefferlin, Postsecondary Alternatives To Meet the Educational Needs of California's Adults, the final report of a feasibility study prepared for the California legislature, September, 1975, p. 25.

[2]I. Bruce Hamilton, The Third Century: Postsecondary Planning for the Nontraditional Learner, a report prepared for the Higher Education Facilities Commission of the State of Iowa, May, 1976, pp. 16-17.

As a part of this report, an actual survey was made of "would-be learners" in Iowa. They were found to be in the majority female; urban; young, with average incomes or better; with some previous college experience; and from families whose principle wage earner is professional, white collar or skilled.[1] This study concluded

> In short, these are the people who have the opportunity, the background, and the resources to afford further education.[2]

A 1976 study completed by the Educational and Occupational Counseling and Information Systems for adults and sponsored by the U.S. Department of Health, Education, and Welfare and the University of Illinois identified the adult clients for information and counseling services to be those about to enter the job market or in transition, those seeking enrichment in their lives, those in need of the updating of technical skills, minority group members, those about to retire, and the rural poor and prisoners.[3]

Recently, community colleges have been observing marked patterns among enrollments that suggest increasingly they are

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[1] Hamilton, pp. 31-32.

[2] Ibid., p. 32.

[3] Educational and Occupational Counseling and Information Systems for Adults, conference report, April 27-28, 1976, Rosslyn, Virginia (produced by the National Center for Educational Brokering, Syracuse, New York), p. 7.

serving those non-traditional adult students in their programs. Bulpitt states

> A national trend shows increased numbers of students--in many cases, more than 50 percent of a community college's enrollment--who are adults. Today the average college student is older and takes fewer hours.[1]

There is increased enrollment from mature women students and veterans.[2] By 1978, these enrollment trends suggest that all types of non-traditional students "may represent the majority of the community college's student body and the typically traditional student is becoming the non-traditional student within that environment."[3]

Not all non-traditional students are older, however. Dorothy Knoell has offered a description of the many young non-traditional students. She states that even the most comprehensive community college still fails in enrolling a student body that is fully representative of its community. Her

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[1]Mildred Bulpitt, "The Adult Student," in Understanding Diverse Students, ed. by Dorothy Knoell, New Directions for Community Colleges(San Francisco: Jossey-Bass Publishers), Autumn, 1973, p.56.

[2]Ibid., p. 60.

[3]Pearl G. Waterhouse,"What's So Non-Traditional about Non-Traditional Students?" Community and Junior College Journal, 48 [February, 1978], 39.

emphasis is primarily upon "young people," and her description, in addition to serving to define some new target populations, also suggests some new barriers to access. She sees as potential community college populations the following: college dropouts and stopouts, high school dropouts, and the disadvantaged.[1]

William A. Robbins has attempted to identify the major demographic characteristics of these young non-traditional students: they are the alienated dropout, the stopout, and the shoved-out.[2] Both Robbins and Knoell suggest that the community college is the best place to serve such young non-traditional students.

The broad area of literature on non-traditional education reveals a real concern with how best to serve these new students.

Research cited by Cross suggests the types of services that the "New Student" in Beyond the Open Door may be expected to request: help in developing good study techniques, counseling about educational and vocational plans, help in developing reading skills, assistance in finding employment,

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[1]Dorothy Knoell, "Those Not in College," in Understanding Diverse Students, pp. 112-117.

[2]William A. Robbins, "The Nontraditional Young Adult Student," in Understanding Diverse Students, p. 71.

financial aids, and counseling about personal problems.[1] She also analyzes data relating to the students' perceptions of their educational experiences. "New Students" are more likely to feel uncomfortable in "the traditional academic educational system," to be attracted to practical preparation for a vocation, and to be split between the old way of life represented by their homes and parents and the new life to which they aspire.[2]

Cross devotes one chapter each to two categories of "New Students" that are not exactly the same as others: ethnic minorities and women. Members of ethnic minorities have a great desire for education to achieve upward mobility, and most have "substantial socioeconomic handicaps."[3] However, their most difficult barriers have been low test scores and low academic performance.[4] Numerically women represent the greatest source of young talent that does not enter post-secondary education.[5] As a group and unlike other "New Students," they are well-qualified academically for such work;[6]

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[1]Cross, Beyond the Open Door, pp. 77-78.

[2]Ibid., pp. 83-84.

[3]Ibid., p. 117.

[4]Ibid., p. 120.

[5]Ibid., p. 135.

the major reason that they do not enter is societal attitudes.[1]

Cross concludes Beyond the Open Door with the thesis that an open door--equal access for all to postsecondary education--is simply not enough. "New Students" have set patterns of failure in traditional academic settings and, for most of them, an attempt at traditional postsecondary education only prolongs their experience of failure.[2] Compensatory programs in community colleges will not be of much assistance to them because their patterns of learning and behavior are generally well-established by the time that they are 17 or 18 years of age.[3] Thus, Cross asks, "Why can't we, just for once, make new educational programs to fit New Students instead of handing down the old education of traditional students?"[4] She suggests in general that new curricula stressing an effectiveness in dealing with human and technological problems be established. These are abilities that we are told will be especially valuable in the future. Since they are also abilities that "New Students"

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[1]Cross, Beyond the Open Door, p. 145.

[2]Ibid., p. 156.

[3]Ibid., p. 157.

[4]Ibid., p. 158.

are likely to have, work in such areas will serve to reverse the experience of the "New Student" with continued failure.[1] Different instructional strategies--including group work, shop work, and sponsored experiential learning in industry and community--will probably best provide educational opportunities for "New Students."[2]

Cross' Beyond the Open Door is the basis for an inquiry, the results of which are presented in her Accent on Learning, the subtitle for which suggests the primary emphasis--"Improving Instruction and Reshaping the Curriculum." She explains

> What started as a simple approach to equality through lowering the access barriers to college has turned into an educational revolution involving all of higher education. The revolution has reached the heart of the educational enterprise --the instructional process itself.[3]

To Cross, perhaps the most important single result of the study of learning behind this revolution is the "demonstration of individual differences."[4] This emphasis has resulted in the "introduction of mastery learning," essential to a realization of egalitarian education, for it allows "New

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[1]Cross, Beyond the Open Door, p. 165.

[2]Ibid., p. 167.

[3]Cross, Accent on Learning, p. 9.

[4]Ibid.

Students" the opportunity to practice success and not failure, and, with its emphasis on criteria and competencies, it suggests that an open door need not result in the lowering of academic standards.[1] In fact, the thesis of Accent on Learning is that education for "New Students" must offer "opportunities for mastery" and a curriculum that results in "the development of excellence in work considered valuable by society."[2] To describe the model curriculum, Cross repeats a suggestion from Beyond the Open Door--that three basic skills are essential: "specific knowledge, interpersonal skills, and the ability to work with objects and materials."[3] Within this perspective of educational pluralism, everyone has inadequacies and is in need of some remediation, for the pluralistic curricular model that Cross suggests includes an "excellence in relation to people, ideas, and things."[4] Its goal is "to help every college student achieve excellence in a career area and to achieve adequacy in dealing with the challenges of life."[5]

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[1] Cross, Accent on Learning, p. 12.

[2] Ibid., p. 23.

[3] Ibid., p. 15.

[4] Ibid., p. 17.

[5] Ibid., p. 18.

Most of Accent on Learning is devoted to a detailed account of recent successful attempts to implement new instructional strategies and curricular changes so that postsecondary education can better serve "New Students": programmed instruction, computer-assisted instruction, computer-managed instruction, mastery learning, self-paced modules, the audio-tutorial approach, the personalized system of instruction, education for personal and academic development, instructional strategies and curricular changes to improve the process of learning about people and mastering interpersonal skills. But one of the most valuable chapters of Accent on Learning involves the delineation of different cognitive styles--those characteristic ways that people have of using their minds.[1] To Cross, the different cognitive styles of the field dependent and the field independent are the most significant for these have demanded the most research study and seem to hold the key to the development of interpersonal competencies.[2] She demonstrates that, even though the theory is not yet substantiated by research findings, there is a significant similarity between the field dependent and the "New Student." Like the field dependent, the "New Student" is people-oriented, complies to the

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[1]Cross, Accent on Learning, p. 112.

[2]Ibid., p. 116.

wishes of authority, is extrinsically motivated, is poor at analytical problem-solving, makes a career choice that is sex stereotyped and comes from a background emphasizing traditional respect for authority and social values.[1]

In a review of research on those instructional strategies best suited to the field dependent--an emphasis on personal attention, class participation, and the personal development of students,[2] she concludes that field dependents are perhaps best taught by PSI, with its use of peer tutors and mentors; audio-tutorial methods with discussion groups; and self-paced instructional methods but with small module size. Because extrinsic rewards are most important for field dependents, the movement to abolish grades may be "ill-advised."[3]

Roueche and Snow in Overcoming Learning Problems survey the current state of the art. Especially useful is their list of characteristics present in most successful developmental and remedial programs: (1) clear expression of the purpose of developmental education to students; (2) use of valid tests to assess students, including self-concept testing; (3) complete integration of such programs into appropriate

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[1] Cross, p. 123.

[2] Ibid., p. 129.

[3] Ibid., pp. 130-132.

departments and divisions; (4) the presence of support departments for learning assistance and media production with counseling personnel available in learning centers; (5) staffing procedures that utilize those who have chosen their assignments in developmental programs and have received special training that includes training in counseling; (6) policies and procedures that result in awarding college credit for developmental work; (7) the use of mastery learning and the systematic design of instruction; and (8) the operations of procedures that result in the self-evaluation of the program and student evaluations of counselors.[1]

In this summary list Roueche and Snow refer to a frequently mentioned instructional strategy today, especially in relation to "new students"--self-concept measurement. Perhaps Roueche and Mink have completed most research in this area, finding a relationship between a student's success and his self-concept. Students who believe that they have some reasonable control over their lives perform better. Students who score low on tests such as the Nowicki-Strickland locus of control scale or the Canfield learning styles inventory will need the most external structure in learning. Generally, the

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[1]John E. Roueche and Jerry J. Snow, Overcoming Learning Problems(San Francisco: Jossey-Bass Publishers, 1977), pp. 80-111.

high risk student is in this group.[1] Additionally, Knox reports research suggesting that adults with "optimal self-concepts use their intellectual abilities more effectively than those with poor self-concepts."[2]

These recommendations relate most especially to students of any age who are non-traditional because they lack previous academic preparation and success. Other recommendations relate to the special needs of adult students and of those from low socioeconomic levels.

Bulpitt indicates a special need of such students for available personnel services: the library, the bookstore, the counseling office, the financial aids office, the placement service office and the cafteria--open evenings and on weekends; personnel with knowledge of and experience in working with adults; extracurricular opportunities for all students at any time of day; special programs for special groups of new students; and recruitment of students in places additional to high schools.[3] Bulpitt also indicates as important a college's

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[1]Roueche and Snow, pp. 101-102.

[2]Alan B. Knox, Adult Development and Learning(San Francisco: Jossey-Bass Publishers, 1977), p. 339.

[3]Bulpitt, pp. 64-65.

providing in-service training in working with adults, class scheduling with adults in mind, and exploration of alternative delivery methods like television courses and self-study packages.[1]

The survey by Carp, Peterson, and Roelfs, already cited several times, provides a good deal of information on the motivations, expectations, and needs of non-traditional adult students. "Would-be learners" were asked what general area they were most interested in learning more about. In rank order, their first choices were as follows: vocational subjects(43%), hobbies and recreation(13%), general education (13%), home and family living(12%), personal development(7%), public affairs(5%), agriculture(3%), and religion(3%). In rank order, they reported some interest in the following: vocational subjects(78%), hobbies and recreation(63%), home and family living(56%), personal development(54%), general education(48%), public affairs(36%), religion(15%), agriculture (3%).[2]

The study of Iowa's non-traditional students had similar results. Their first choices of subject areas were vocational subjects(36%), professional fields(25%), general education(12%), home and family living(11%), and hobbies and recreation(8%).[3]

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[1]Bulpitt, p. 66.

[2]Carp, Peterson, and Roelfs, p. 18.

[3]Hamilton, p. 36.

Clearly, non-traditional programs for adults need to provide, in addition to general education, strong components providing vocational training, information on hobbies and recreation, and courses related to home and family living.

Similarly, the study on education and occupational counseling and information systems for adults, already cited, found clientele motivated by a wish to change their lives with "ultimate motivations linked to job and career concerns. They sought specific, concrete, and local information that they could personalize as a basis for action on neutral territory. They possessed traditional expectations of education, not wishing to be "pilot samples for avant-garde programs," and, based upon previous bad experiences, they had mixed feelings about education. Individually, they tended to lack self confidence, to not be self-starters, to prefer anonymity on first contact, to be unaware of their own needs, to resist information, to have poor information and inquiry skills, and to place high trust in "personal level information," such as that received from friends.[1]

Wesley Walton surveyed non-traditional programs to determine their delivery systems. He concluded

> When the needs and interests of the adult learner are put first, and institutional interests are subordinated, it becomes unmistakably clear

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[1] Educational and Occupational Counseling and Information Systems for Adults, pp. 9-10.

> that telecommunications technologies have become essential components for the delivery of instruction. Without them, it is impossible to deliver instruction to the adults who want and need it.[1]

He also makes clear that such uses of instructional technology "need to be not only technologically effective but also sufficiently enriched with human elements of the learning process--mentors, teachers, counselors, and guides."[2]

However, at the same time that studies suggest the need for instructional technology to serve the needs of students in non-traditional programs, "would-be learners" in other studies seem not to prefer education delivered in this way. Carp, Peterson, and Roelfs found that the largest groups of such students wanted lectures and classes(28%) or on-the-job training(21%). Third was short-term workshops, preferred by 13%. Only one percent preferred videocassettes and one percent,radio and audiocassettes.[3] At the same time, 10% preferred a home location for instruction.[4]

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[1]Wesley Walton, "New Paths for Adult Learning," in Planning Non-Traditional Programs, p. 96.

[2]Ibid., p. 98.

[3]Carp, Peterson, and Roelfs, p. 30.

[4]Ibid., p. 33.

In summary, this survey of recent literature suggests that major barriers to access in postsecondary education are cost, insufficient time, and geographic inaccessibility. Study Unlimited seeks specifically to remove barriers of time and place. This study sought to find the level of family/parental income of those enrolled in the program to determine whether or not the clientele was especially in need of financial aids and, therefore, more in need of information about them. Another objective of this study was to identify the number of students enrolled in Study Unlimited with previous poor academic preparation and low past levels of academic achievement. Clearly, the presence of large numbers of such students requires different services than those required by other types of new students. In addition, this study attempted to determine other characteristics of Study Unlimited students that suggest a need for special services. Demographic descriptions of "new students" ordinarily include such factors as age, sex, employment status, method of completing high school, and student status. This study, therefore, evaluated Study Unlimited enrollments in relation to these major demographic characteristics. The study also attempted to determine membership in ethnic/racial minority groups and the primary reason motivating students to attend college. The ultimate

goal of this study was to provide the sort of information necessary for planning the program so that it would fit the needs and characteristics of its students, rather than, as suggested by Cross, "handing down the old education of traditional students."[1]

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[1]Cross, Accent on Learning, p. 158.

III. PROCEDURES AND METHODOLOGY

In this comparative demographic study, data were collected in the following manner. One hundred students were selected by random methods from the file of folders arranged by social security number for all the approximately 6400 students enrolled in college-credit courses at Black Hawk College during the fall semester of 1977. These folders, which are in the college's registrar's office, contain admissions forms, high school transcripts, and A.C.T. test results. This group was the sample of the general college population. Similarly, from an alphabetical listing of all approximately 440 students enrolled in the Study Unlimited college courses from August 22, 1977, to November 15, 1977, one hundred students were selected at random. This sampling represented the Study Unlimited student population.

Following the collection of random samples, the following demographic information was taken from the college admissions form: age, membership in ethnic/racial group, employment status, whether or not the student had completed high school by means of the G.E.D. examination, and whether or not the student had ever before enrolled at Black Hawk College. Information in relation to each of these aspects was readily available for all 200 students studied in their student records.

These same student records contain transcripts from high schools and other colleges and the results of the American College Testing Program, if available. All full-time students are supposed to submit A.C.T. scores at the time of admission, and all students, including part-time students, are required to submit high school or college transcripts. However, in actuality, this study showed that the student records are not very complete in relation to either of these types of information. A general policy on the part of Black Hawk College has been to remove as many access barriers as possible in the admissions policies by not absolutely requiring this basis information.

This study proposed to determine the student's prior academic achievement level by the use of either the A.C.T. scores or high school transcripts. If test scores from the A.C.T. program were available for the student, the percentile rank for the college-bound national norms for the composite score was used to assign the student to a tripartite indicating past academic achievement level. If such test scores were not available, the student's high school rank was to be used to make such an assignment.

It was assumed that either A.C.T. test scores or high school transcripts would be available for 70 percent or more of the students studied. In actuality, it was discovered that this information was available for fewer than 50%. Therefore,

in the absence of information from either source, at the time of the telephone interview of each student, another question was included--"Did you rank in the lower third of your high school graduating class?" This additional source of data was used in the study to determine the past level of academic achievement in high school for students included.

Data on the student's major goal in college attendance and the annual gross parental and/or family income were secured by means of a telephone interview. The form used in the compilation of data is included in Appendix A. Those students who could not be reached during the two months of telephone interviews or who did not have telephones were sent letters explaining the survey and requesting that they call Black Hawk College at a convenient time for the interview.

Once data were collected in this manner, they were analyzed for each of the nine null hypotheses in the study as follows: Hypothesis 1: The age distribution of students enrolled in college-credit classes in Study Unlimited is no different than the age distribution of students in the general college population. To determine the validity of the null hypothesis, a fourteen-celled contingency table was established as follows:

	Study Unlimited	General College
17 or younger		
18-20		
21-24		
25-35		
36-45		
46-62		
63 or older		

The age categories on this contingency table were established because they represent the major stages of adult development. It was anticipated that in the case of both populations there would be a number of students for whom age was unknown because they had reported none at the time of completing the college admissions form. Thus, the number in the "unknown" category was noted in both sets of data but was not included in the statistical analysis. The numbers of students falling within each cell in the contingency table were translated into percentages of the total number reporting for purposes of statistical analysis.

To test the null hypothesis a two-tailed $\bar{X}^2$ test for "goodness of fit" was used at a critical level of .05. The Study Unlimited population distributions were considered to be the "observed frequencies" and the general college population distributions, the "expected frequencies."

Hypothesis 2: The proportion of part-time students enrolled in college-credit courses in Study Unlimited is no greater than the proportion of similar students in the general college population. This hypothesis required a comparison of the two populations on the basis of academic status, either full-time or part-time enrollment. To determine the validity of the null hypothesis, a four-celled contingency table was established as follows:

	Study Unlimited	General College
Part-Time		
Full-Time		

Once again, it was anticipated that, in the case of both populations, there would be a number of students for whom student status was unknown because they had reported none at the time of completing the college admissions form. Thus, the number in the "unknown" category was noted in data but was not included in the statistical analysis. The numbers of students falling into each cell in the contingency table were translated into percentages of the total number reporting.

To test the null hypothesis, a two-tailed $\overline{X}^2$ test for "goodness of fit" was used at a critical level of .05. The Study Unlimited population distributions were considered to be the "observed frequencies," and the general college population distributions, the "expected frequencies."

Hypothesis 3: The distribution of students enrolled in college-credit courses according to membership in ethnic/racial groups is no different than the distribution of students in the general college population. To determine the validity of this null hypothesis, a twelve-celled contingency table was established as follows:

	Study Unlimited	General College
White		
Black		
Hispanic		
American Indian		
Oriental		
Other		

Categories used and checked most frequently on the Black Hawk College admissions form were used in this table: White, Black, Hispanic, American Indian, Oriental, and other minority groups. The two-tailed $\bar{x}^2$ test for "goodness of fit" was used at a critical level of .05 to see if there was a significant statistical difference between the two populations in the distribution. The Study Unlimited population distributions were considered to be the "observed frequencies," and the general college population distributions, the "expected frequencies."

Once again, it was anticipated that, in the case of both populations, there would be a number of students for whom membership in ethnic/racial groups was unknown because they had reported none at the time of completing the college admissions form or because they had refused to indicated membership. Thus, the number in the "unknown" category was noted in data but was not included in the statistical analysis. The numbers of students falling into each cell in the contingency table were translated into percentages of the total number reporting for purposes of the statistical analysis.

Hypothesis 4: The proportion of students enrolled in college-credit courses in Study Unlimited who are gainfully employed full-time is no greater than the proportion of students in the general college population. To determine the validity of this null hypothesis, a four-celled contingency table was established as follows:

	Study Unlimited	General College
Full-Time		
Part-Time/ Unemployed		

"Gainfully employed full-time" means working for a salary thirty-five hours per week or more at one or more jobs for eight or more months each year. Once again, it was anticipated that, in the case of both populations, there would be a number of students for whom employment status was unknown because they had reported none at the time of completing the college admissions form. Thus, the number in the "unknown" category was noted in data but was not included in the statistical analysis. The numbers of students falling into each cell in the contingency table were translated into percentages of the total number reporting for purposes of statistical analysis.

The two-tailed $\bar{x}^2$ test for "goodness of fit" was used at a critical level of .05 to determine whether or not there

was a significant statistical difference between the two populations in the distribution.

Hypothesis 5: The proportion of students enrolled in college-credit courses in Study Unlimited who are from families with a gross annual parental and/or family income of $10,000 or less is no greater than the proportion of students in the general college population. To determine the validity of this null hypothesis, a four-celled contingency table was established as follows:

	Study Unlimited	General College
Above $10,000		
Below $10,000		

Once again, it was anticipated that, in the case of both populations, there would be a number of students for whom gross annual parental and/or family income was unknown because they could not be reached by telephone interview or because they had refused to indicate during the interview. Thus, the number in the "unknown" category was noted in data but was not included in the statistical analysis. The numbers of students falling into each cell in the contingency table were translated into percentages of the total number reporting for purposes of statistical analysis.

The two-tailed $\bar{X}^2$ test for "goodness of fit" at a critical level of .05 was used to determine whether or not there was

a significant statistical difference between the two populations in the distribution.

Hypothesis 6: The proportion of students enrolled in college-credit courses in Study Unlimited who score in the lowest third on traditional tests of academic ability or who were in the lowest third of their high school graduating classes or both is no greater than the proportion of students in the general college population. To determine the validity of this null hypothesis, a four-celled contingency table was established as follows:

	Study Unlimited	General College
Not in Lower Third		
In Lower Third		

Once again, it was anticipated that, in the case of both populations, there would be a number of students for whom level of past academic achievement measured in these ways was unknown because they could not be reached by telephone or because their student records included no high school transcript and no results from the American College Testing Program. Thus, the number in the "unknown" category was noted but was not included in the statistical analysis. The numbers

of students falling into each cell in the contingency table were translated into percentages of the total number reporting for purposes of statistical analysis.

A two-tailed $\bar{X}^2$ test for "goodness of fit" at a critical level of .05 was used to determine whether or not there was a significant statistical difference between the two populations in the distribution.

Hypothesis 7: The proportion of students enrolled in college-credit courses in Study Unlimited who completed high school by means of the G.E.D. examination is no greater than the proportion of similar students in the general college population. To determine the validity of this null hypothesis, a four-celled contingency table was established as follows:

	Study Unlimited	General College
G.E.D.		
High School		

Once again, it was anticipated that, in the case of both populations, there would be a number of students for whom method of gaining high school equivalency was not available, either because of incomplete responses on college admissions forms or because they could not be reached by telephone. In

addition, it was anticipated that there would be a number of students in both groups who had not completed high school in either way, among them some still in high school and taking college-credit courses on a part-time basis. Thus, the number in the "unknown" category was noted but was not included in the statistical analysis. The numbers of students falling into each cell in the contingency table were translated into percentages of the total number reporting for purposes of statistical analysis.

A two-tailed $\bar{X}^2$ test for "goodness of fit" at a critical level of .05 was used to determine whether or not there was a significant statistical difference between the two populations in the distribution.

Hypothesis 8: The proportion of students who, upon their initial enrollment in Study Unlimited, had never before attended Black Hawk College is no greater than the proportion of students in the general college population. To determine the validity of this null hypothesis, a four-celled contingency table was established as follows:

	Study Unlimited	General College
New Students		
Old Students		

Once again, it was anticipated that, in the case of both

populations, there would be a number of students for whom information on whether or not they had ever before attended Black Hawk College would not be available, either because they could not be reached by telephone or because they had not responded to the appropriate question on the college admissions form. Thus, the number in the "unknown" category was noted but was not included in the statistical analysis. The numbers of students falling into each cell in the contingency table were translated into percentages of the total number reporting for purposes of statistical analysis.

A two-tailed $\bar{X}^2$ test for "goodness of fit" at a critical level of .05 was used to determine whether or not there was a significant statistical difference between the two populations in the distribution.

Hypothesis 9: The proportion of students enrolled in college-credit courses in Study Unlimited who have as a major goal job upgrading and advancement, improved skills in present employment, entry into the job market in a field that they have clearly established is no greater than the proportion of students in the general college population. Students were interviewed by telephone. They were asked to select one major goal for attending Black Hawk College from among the following: to improve my skills for my present job, to get a better job or one that I will enjoy more, to prepare for employment,

to learn more about a field or several fields that I've always been interested in, to try out college on a part-time basis, to learn more about an area for my personal enjoyment and satisfaction, to complete a college course because I always wanted to attend college but never had the opportunity to do so before, to satisfy another person who has been telling me that I should go to college, and to begin work in college so that I will have a college degree some day.

From among these possible reasons, the first three were determined to indicate a major goal involving job upgrading and advancement, improved skills in present employment, or entry into the job market in a clearly established field--in short, to be "job-related goals." To determine the validity of this null hypothesis, a four-celled contingency table was established as follows:

	Study Unlimited	General College
Job-Related Goals		
Other Goals		

Once again, it was anticipated that, in the case of both populations, there would be a number of students for whom

information on major college goals would not be available because they could not be reached for telephone interview. Thus, the number in the "unknown" category was noted but was not included in the statistical analysis. The numbers of students falling into each cell in the contingency table were translated into percentages of the total number reporting for purposes of statistical analysis.

A two-tailed $\bar{x}^2$ test for "goodness of fit" at a critical level of .05 was used to determine whether or not there was a significant statistical difference between the two populations in distribution.

Following this statistical analysis of data in relation to the hypotheses to be tested and as a part of the proposed methodology for this study was an interpretation of the results so that they could be used as a basis for decision-making. This interpretation resulted in two types of recommendations: (1) a summative evaluation of the program, which has operated for three years, to determine whether or not it should be continued and (2) a formative evaluation of the program to determine those changes necessary so that it can better meet its objectives.

IV. FINDINGS

College records for all students included in the random samples from both populations were available, but as was indicated ealier, not all information in these records was complete. However, in relation to no hypothesis tested did the available information drop below the 70 percent level. Thus, available data from student records were judged adequate to yield valid results. Not all students could be reached for a telephone interview, but, once again, the data available were adequate, equaling or exceeding the 70 percent level in all cases. Specifically, 77 percent of the Study Unlimited sample population was reached for telephone interview, and 74 percent of the general college population was reached. Thus, again in relation to this data source, results were judged adequate to yield valid conclusions.

Hypothesis 1: The age distribution of students enrolled in college-credit courses in Study Unlimited is no different than the age distribution of students in the general college population.

Data Resulting from the Study: Table 1 below presents a summary of the data collected in relation to the ages of students enrolled in Study Unlimited and in the general college population.

TABLE 1
DISTRIBUTION OF STUDENTS BY AGE

	Study Unlimited		General College	
	Number	Percentage	Number	Percentage
17 or younger	1	1%	0	0%
18-20	33	33%	36	37%
21-24	27	27%	20	20%
25-35	28	28%	30	30%
36-45	8	8%	10	10%
46-62	3	3%	2	2%
63 or older	0	0%	1	1%
TOTAL	100	100%	99	100%
Unknown			1	

In the data on students included in the Study Unlimited sample, age was known for all 100. In the data on students included in the general college population sample, age was known for 99 of the 100. These numbers were noted but were not used in any way in the statistical analysis of these data summarized below.

In the $\bar{X}^2$ test no cell may contain fewer than five cases; if a cell does so, the results of the test are invalid. Such a situation occurred in relation to six of the cells in the fourteen-celled contingency table that was used. Following standard procedures, therefore, these smaller cells were combined until all cells contained at

five. The result was an eight-celled contingency table as follows:

	Study Unlimited	General College
17 or younger-20	34%	37%
21-24	27%	20%
25-35	28%	30%
36-63 or older	11%	13%
TOTAL	100%	100%

As explained in the procedures section of the study, because data for some students in the random sample were not available the results were translated into percentages of the total known number.

Analysis of the Data: A two-tailed $\bar{X}^2$ test at a critical level of .05 was used to determine whether or not there was a statistically significant difference in the distribution by students from the two populations by age. In Table 2, which summarizes the calculation of this test as used in relation to Hypothesis 1, f_o refers to the Study Unlimited student population, and f_e refers to percentages for the general college population. The numbers under f_o and f_e refer to percentages of the totals for each of these groups.

TABLE 2
CALCULATION OF $\bar{x}^2$

CELL	F_o	F_e	F_o-F_e	$[F_o-F_e]^2$	$\frac{(F_o-F_e)^2}{F_e}$
17 or younger-20	34	37	-3	9	.24
21-24	27	20	7	49	2.45
25-35	28	30	-2	4	.13
36-63 or older	11	13	-2	4	.31
					$\bar{x}^2 = 3.13$

$\alpha = .05$

dF =2

$\alpha = 5.99$

F_o=observed frequency

F_e=expected frequency

$$\bar{x}^2 = \sum \left[\frac{(F_o-F_e)^2}{F_e} \right]$$

Significance of the Data: Since the calculated value of $\bar{x}^2$ does not exceed the critical value, the null hypothesis was retained. The information included in Table 2 suggests that the distribution of students by age in the Study Unlimited population is not significantly different than the distribution

of students by age in the general college population.

Hypothesis 2: The proportion of part-time students enrolled in college-credit courses in Study Unlimited is no greater than the proportion of similar students in the general college population.

Data Resulting from the Study: Table 3 below presents a summary of the data collected in relation to the ages of students enrolled in Study Unlimited and in the general college population.

TABLE 3
DISTRIBUTION OF STUDENTS BY ACADEMIC STATUS

	Study Unlimited		General College	
	Number	Percentage	Number	Percentage
Part-Time	59	60%	57	59%
Full-Time	40	40%	40	41%
TOTAL	99	100%	97	100%
Unknown	1		3	

In the data for students from the Study Unlimited sample, academic status was known for 99. In the data for students from the general college population sample, academic status was known for 97 of the 100. These numbers were noted but were not used in the statistical analysis of these data.

TABLE 4
CALCULATION OF $\bar{X}^2$

CELL	F_o	F_e	F_o-F_e	$(F_o-F_e)^2$	$\frac{(F_o-F_e)^2}{F_e}$
Part-Time	60	59	1	1	.017
Full-Time	40	41	-1	1	.024
				$\bar{X}^2$ =	.041

α = .05
df=1.00
α=3.84

F_o=observed frequency
F_e=expected frequency

$$\bar{X}^2 = \sum \left[\frac{(F_o-F_e)^2}{F_e} \right]$$

Significance of the Data: Since the calculated value of $\bar{X}^2$ does not exceed the critical value, the null hypothesis was retained. The information included in Table 4 suggests that the distribution of students by academic status in the Study Unlimited population is not significantly different than the distribution of students by academic status in the general college population.

Hypothesis 3: The distribution of students enrolled in college-credit courses according to membership in ethnic/racial groups is no different than the distribution of students in the general college population.

Data Resulting from the Study: Table 5 below presents a summary of the data collected in relation to the ethnic/racial group membership of students enrolled in Study Unlimited and in the general college population.

TABLE 5
DISTRIBUTION OF STUDENTS BY
MEMBERSHIP IN ETHNIC/RACIAL GROUPS

	Study Unlimited		General College	
	Number	Percentage	Number	Percentage
White	80	84%	83	90%
Black	7	7%	5	5%
Hispanic	3	3%	4	4%
American Indian	1	1%	0	0%
Oriental	2	2%	1	1%
Other	3	3%	0	0%
TOTAL	96	100%	93	100%
Unknown	4		7	

In the $\bar{X}^2$ test, no cell may contain fewer than five cases; if a cell does so, the results of the test are invalid. Such a situation occurred in relation to eight of the cells in this twelve-celled contingency table. Following standard procedures, therefore, these smaller cells were combined until all cells contained at least five. The only meaningful way to construct the table resulted in a four-celled contingency table as follows:

	Study Unlimited	General College
White	84%	90%
Non-White	16%	10%
TOTAL	100%	100%

As explained in the procedures section of this study, because data for some students in the random sample were not available, the results were translated into percentages of the total known number.

Analysis of the Data: A two-tailed $\bar{X}^2$ test at a critical level of .05 was used to determine whether or not there was a statistically significant difference in the distribution of students from the two populations by membership in ethnic/

racial groups. In Table 6, which summarizes the calculation of this test as used in relation to Hypothesis 3, f_o refers to the Study Unlimited student population, and f_e refers to percentages for the general college population. The numbers under f_o and f_e refer to percentages of the totals for each of these groups.

TABLE 6
CALCULATION OF $\overline{X}^2$

CELL	f_o	f_e	f_o-f_e	$(f_o-f_e)^2$	$\frac{(f_o-f_e)^2}{f_e}$
White	84	90	-6	36	.40
Non-White	16	10	6	36	3.60
				$\overline{X}^2$ =	4.00

α= .05
df=1.00
α=3.84

f_o=observed frequency
f_e=expected frequency

$$\overline{X}^2 = \sum \left[\frac{(f_o-f_e)^2}{f_e} \right]$$

Significance of the Data: Since the calculated value of $\bar{x}^2$ exceeds the critical value, the null hypothesis was disproved, and the positive hypothesis was accepted: The distribution of students enrolled in college-credit courses according to membership in ethnic/racial groups is different than the distribution of students in the general college population. The difference between the two groups, as demonstrated by the data, is that the Study Unlimited population sample includes more students who are non-white, 16% compare to 10% in the general college population.

Hypothesis 4: The proportion of students enrolled in college-credit courses in Study Unlimited who are gainfully employed full-time is no greater than the proportion of students in the general college population.

Data Resulting from the Study: Table 7 below presents a summary of the data collected in relation to the employment status of students enrolled in Study Unlimited and in the general college population.

TABLE 7
DISTRIBUTION OF STUDENTS BY
EMPLOYMENT STATUS

	Study Unlimited		General College	
	Number	Percentage	Number	Percentage
Full-Time	52	53%	47	48%
Part-Time/ Unemployed	47	47%	50	52%
TOTAL	99	100%	97	100%
Unknown	1		3	

In the data for students from the Study Unlimited population, employment status was known for 99. In the data for students from the general college population sample, employment status was known for 97. In the Study Unlimited sample, data were not available for 1; in the general college population, for 3. These numbers were noted but were not used in the statistical analysis of these data.

Analysis of the Data: A two-tailed $\overline{X}^2$ test at a critical level of .05 was used to determine whether or not there was a statistically significant difference in the distribution from the two populations by employment status. In Table 8, which summarizes the calculation of this test as used in relation to Hypothesis 4, f_o refers to the Study Unlimited student population, and f_e refers to percentages for the general college population. The numbers under f_o and f_e refer to percentages of the totals for each of these groups.

TABLE 8
CALCULATION OF $\bar{X}^2$

CELL	f_o	f_e	$f_o - f_e$	$(f_o - f_e)^2$	$\frac{(f_o - f_e)^2}{f_e}$
Full-Time	53	48	5	25	.52
Unemployed/ Part-Time	47	52	-5	25	.48
					$\bar{X}^2 = 1.00$

$\alpha = .05$
$df = 1.00$
$\alpha = 3.84$

f_o=observed frequency
f_e=expected frequency

$$\bar{X}^2 = \sum \left[\frac{(f_o - f_e)^2}{f_e} \right]$$

Significance of the Data: Since the calculated value of $\bar{X}^2$ does not exceed the critical value, the null hypothesis was retained. The information included in Table 8 suggests that

the distribution of students by employment status in the Study Unlimited population is not significantly different than the distribution of students by academic status in the general college population.

Hypothesis 5: The proportion of students enrolled in college-credit courses in Study Unlimited who are from families with a gross annual parental and/or family income of $10,000 or less is no greater than the proportion of students in the general college population.

Data Resulting from the Study: Table 9 below presents a summary of the data collected in relation to parental/family income of students enrolled in Study Unlimited and in the general college population.

TABLE 9
DISTRIBUTION OF STUDENTS BY
FAMILY/PARENTAL INCOME LEVEL

	Study Unlimited		General College	
	Number	Percentage	Number	Percentage
Above $10,000	59	80%	59	84%
Below $10,000	15	20%	11	16%
TOTAL	74	100%	70	100%
Unknown	26		30	

In the data for students from the Study Unlimited population, family/parental income was known for 74. In the data for

the general college population, family/parental income level was known for 70. In the Study Unlimited sample, data were unknown for 26; in the general college population sample, for 30. These numbers were noted but were not used in the statistical analysis of these data.

Analysis of the Data: A two-tailed $\bar{X}^2$ test at a critical level of .05 was used to determine whether or not there was a statistically significant difference in the distribution from the two populations by family/parental income levels. In Table 10, which summarizes the calculation of this test as used in relation to Hypothesis 5, f_o refers to the Study Unlimited student population, and f_e refers to the general college population. The numbers under f_o and f_e refer to percentages of the totals of known cases for each group.

TABLE 10
CALCULATION OF $\bar{X}^2$

CELL	f_o	f_e	f_o-f_e	$(f_o-f_e)^2$	$\frac{(f_o-f_e)^2}{f_e}$
Above $10,000	80	84	-4	16	.19
Below $10,000	20	16	4	16	1.00
				$\bar{X}^2$ =	1.19

α = .05
df=1.00
α=3.84

f_o=observed frequency
f_e=expected frequency

$$\bar{X}^2 = \sum \left[\frac{(f_o-f_e)^2}{f_e} \right]$$

Significance of the Data: Since the calculated value of $\bar{X}^2$ does not exceed the critical value, the null hypothesis was retained. The information included in Table 10 suggests that the distribution of students by family/parental income in the Study Unlimited population is not significantly different

than the distribution of students by family/parental income in the general college population.

Hypothesis 6: The proportion of students enrolled in college-credit courses in Study Unlimited who score in the lowest third on traditional tests of academic ability or who were in the lowest third of their high school graduating classes or both is no greater than the proportion of students in the general college population.

Data Resulting from the Study: Table 11 below presents a summary of the data collected in relation to past level of academic achievement for students enrolled in Study Unlimited and in the general college population.

TABLE 11
DISTRIBUTION OF STUDENTS BY
ACADEMIC BACKGROUND

	Study Unlimited		General College	
	Number	Percentage	Number	Percentage
Not in Lower Third	59	65%	64	84%
In Lower Third	28	35%	13	17%
TOTAL	87	100%	77	100%
Unknown	13		23	

In the data for students from the Study Unlimited population, past level of academic achievement was known for 87 . In the

data for the general college population, past level of academic achievement was known for 77. In the Study Unlimited sample, data were unknown for 13; in the general college population sample, for 23. These numbers were noted but were not used in the statistical analysis of these data.

Analysis of the Data: A two-tailed $\bar{X}^2$ test at a critical level of .05 was used to determine whether or not there was a statistically significant difference in the distribution from the two populations by level of past academic achievement. In Table 12, which summarizes the calculation of this test as used in relation to Hypothesis 6, f_o refers to the Study Unlimited student population, and f_e to the percentages for the general college population. The numbers under both f_o and f_e refer to percentages of the totals for each group.

TABLE 12
CALCULATION OF $\bar{x}^2$

CELL	f_o	f_e	$f_o - f_e$	$(f_o - f_e)^2$	$\frac{(f_o - f_e)^2}{f_e}$
Not in Lower Third	65	83	-18	324	3.90
In Lower Third	35	17	18	324	19.06
				$\bar{x}^2$ =	22.96

α = .05
dF=1.00
α =3.84

f_o = observed frequency
f_e = expected frequency

$$\bar{x}^2 = \sum \left[\frac{(f_o - f_e)^2}{f_e} \right]$$

Significance of the Data: Since the calculated value of $\bar{x}^2$ exceeded the critical value, the null hypothesis was disproved and the corresponding positive hypothesis was accepted: The proportion of students enrolled in college-credit courses in Study Unlimited who score in the lowest third on traditional tests of academic ability or who were in the lowest third of

their high school graduating classes or both is greater than the proportion of students in the general college population.

Hypothesis 7: The proportion of students enrolled in college-credit courses in Study Unlimited who completed high school by means of the G.E.D. examination is no greater than the proportion of similar students in the general college population.

Data Resulting from the Study: Table 13 below presents a summary of the data collected in relation to the method by which students completed high school.

TABLE 13
DISTRIBUTION OF STUDENTS BY
METHOD OF COMPLETING HIGH SCHOOL

	Study Unlimited		General College	
	Number	Percentage	Number	Percentage
G.E.D. Certificates	4	4%	9	9%
High School Diplomas	95	96%	88	91%
TOTAL	99	100%	97	100%
Other	1		3	

In the data for students from the Study Unlimited population, one student in the sample had not yet completed high school; in the general college population, 3 students were without either high school diplomas or high school equivalency by

means of the G.E.D. examination. These students were enrolled in college-credit certificate programs that do not require a high school equivalency for entrance. These numbers were noted but were not used in the statistical analysis of these data.

Analysis of the Data: A two-tailed $\bar{X}^2$ test at a critical level of .05 was used to determine whether or not there was a statistically significant difference in the distribution of the two populations in relation to the method of achieving high school equivalency. In Table 14, which summarizes the calculation of this test as used in relation to Hypothesis 7, f_o refers to the Study Unlimited student population, and f_e to the percentages for the general college population. The numbers under both f_o and f_e refer to percentages of the totals for each group.

TABLE 14
CALCULATION OF $\bar{x}^2$

CELL	f_o	f_e	f_o-f_e	$(f_o-f_e)^2$	$\frac{(f_o-f_e)^2}{f_e}$
G.E.D. Certificates	4	9	-5	25	2.77
High School Diplomas	96	91	5	25	.27
					$\bar{x}^2 = 3.04$

$\alpha = .05$
df=1.00
α=3.84

f_o=observed frequency
f_e=expected frequency

$$\bar{x}^2 = \sum \left[\frac{(f_o-f_e)^2}{f_e} \right]$$

Significance of the Data: Since the calculated value of $\bar{x}^2$ did not exceed the critical value, the null hypothesis was retained. The information in Table 14 suggests that the distribution of students by method of gaining high school equivalency in the Study Unlimited population is not significantly different than the distribution of students by method

of gaining high school equivalency in the general college population.

Hypothesis 8: The proportion of students who, upon their initial enrollment in Study Unlimited, had never before attended Black Hawk College is no greater than the proportion of students in the general college population.

Data Resulting from the Study: Table 15 below presents a summary of the data collected in relation to prior student enrollment in college-credit courses at Black Hawk College for students enrolled in Study Unlimited and in the general college population.

TABLE 15
DISTRIBUTION OF STUDENTS BY
PRIOR ENROLLMENT

	Study Unlimited		General College	
	Number	Percentage	Number	Percentage
New Student	46	46%	41	41%
Old Student	54	54%	58	59%
TOTAL	100	100%	99	100%
Unknown			1	

In the data for students from the Study Unlimited population, prior enrollment was known for all students. In the

data for the general college population, prior enrollment was known for 99. In the general college population sample, therefore, data were unknown for one student. This number was noted but was not used in the statistical analysis of these data.

Analysis of the Data: A two-tailed $\bar{X}^2$ test at a critical level of .05 was used to determine whether or not there was a statistically significant difference in the distribution between the two populations in relation to whether or not individual students had ever before enrolled in a Black Hawk College credit course. In Table 16, which summarizes the calculation of this test as used in relation to Hypothesis 8, f_o refers to the Study Unlimited student population, and f_e refers to the general college population. The numbers under both f_o and f_e refer to percentages of the totals for each group.

TABLE 16
CALCULATION OF $\bar{X}^2$

CELL	f_o	f_e	f_o-f_e	$(f_o-f_e)^2$	$\frac{(f_o-f_e)^2}{f_e}$
New Students	46	41	5	25	.61
Old Students	54	59	-5	25	.42
				$\bar{X}^2$ =	1.03

α = .05
df=1.00
α=3.84

f_o=observed frequency

f_e=expected frequency

$$\bar{X}^2 = \sum \left[\frac{(f_o-f_e)^2}{f_e} \right]$$

Significance of the Data: Since the calculated value of $\bar{X}^2$ did not exceed the critical value, the null hypothesis was retained. The information in Table 16 suggests that the distribution of students on the basis of prior enrollment in college-credit courses at Black Hawk College in the Study Unlimited population is not significantly different than

the distribution of students in the general college population.

Hypothesis 9: The proportion of students enrolled in college-credit courses in Study Unlimited who have as a major goal job upgrading and advnacements, improved skills in present employment, or entry into the job market in a field that they have clearly established is no greater than the proportion of students in the general college population.

Data Resulting from the Study: Table 17 below presents a summary of the data collected in relation to major goal in college attendance for students enrolled in college-credit courses in Study Unlimited and in the general college population.

TABLE 17
DISTRIBUTION OF STUDENTS BY
MAJOR GOALS

	Study Unlimited		General College	
	Number	Percentage	Number	Percentage
Job-Related Goals	48	62%	55	74%
Other Goals	29	38%	19	26%
TOTAL	77	100%	74	100%
Unknown	23		26	

In the data for students from the Study Unlimited population, major goal was known for 77 students. In the data for the general college population, major goal was known for 74. In the general college population sample, therefore, data were unknown for 26; in the Study Unlimited population sample, for 23. These numbers were noted but were not included in the statistical analysis of these data.

Analysis of the Data: A two-tailed $\overline{X}^2$ test at a critical level of .05 was used to determine whether or not there was a statistically significant difference in the distribution among the two populations in relation to major goal for attending college. In Table 18, which summarizes the calculation of this test as used in relation to Hypothesis 9, f_o refers to the Study Unlimited student population, and f_e to the percentages for the general college population. The numbers under both f_o and f_e refer to percentages of the totals for each group.

TABLE 18
CALCULATION OF $\bar{X}^2$

CELL	f_o	f_e	f_o-f_e	$(f_o-f_e)^2$	$\frac{(f_o-f_e)^2}{f_e}$
Job-Related Goals	62	74	-12	144	1.95
Other Goals	38	26	12	144	5.54
				$\bar{X}^2$ =	7.49

α = .05
dF =1.00
α=3.84

f_o=observed frequency
f_e=expected frequency

$$\bar{X}^2 = \sum \left[\frac{(f_o-f_e)^2}{f_e} \right]$$

Significance of the Data: Since the calculated value of $\bar{X}^2$ exceeded the critical value, the null hypothesis was proved invalid, and the parallel positive hypothesis was accepted: The proportion of students enrolled in college-credit courses in Study Unlimited who have as a major goal

job upgrading and advancements, improved skills in present employment, or entry into the job market in a field that they have clearly established is no greater than the proportion of students in the general college population. Table 18 suggests that statistically more students enrolled in Study Unlimited have goals other than those that are job-related.

The two populations studied were found to differ significantly statistically in relation to membership in ethnic and racial groups, past level of academic achievement, and major goal for attending college. More Study Unlimited students were non-white; more had low levels of past academic achievement; and more had major college goals that were not job-related. Both groups did not differ significantly in relation to age distribution, academic status as either full-time students or part-time, employment status as either full-time or part-time/unemployed, level of family/parental income, method of completing high school equivalency, or whether or not they had ever before been enrolled at Black Hawk College.

Statistically, the general college population was old for a community college; 66 percent of students were above traditional community college age, or 21 or older. The majority of students in the general college population--or

59 percent were part-time students. Approximately 90% of students from the general college population were white, and approximately 10 percent was non-white. The general college population was split about equally in relation to employment status; about 48% were employed full-time, and the rest were either unemployed or employed part-time. About 84% of the general college population reported family and/or parental gross annual incomes of $10,000 or more. About 17 percent of the general college population reported low levels of prior academic achievement. Among students in the general college population, approximately 9 percent completed high school by means of the G.E.D. examination, and approximately 41 percent were new students--that is, they had never before enrolled in a college-credit course at Black Hawk College. By far, the main reason for their attending Black Hawk College is job related, 74 percent reporting such goals.

Statistically, the Study Unlimited student population was also old for a community college; 66 percent of students were above traditional community college age, or 21 or older. The majority of students in Study Unlimited--or approximately 50 percent were part-time students. Approximately 84% of these students were white, and about 53% were employed full-time. About 80 percent of the Study Unlimited student

population reported gross family/parental annual incomes of $10,000 or above, and approximately 35% reported low levels of past academic achievement. Only approximately 4 percent of the Study Unlimited population sample completed high school by means of the G.E.D. examination, and 46 percent had never before enrolled in college-credit courses at Black Hawk College. Finally approximately 38 percent of students enrolled in Study Unlimited had college goals other than those that were job-related.

V. SUMMARY AND CONCLUSIONS

This comparative demographic study of students enrolled in Study Unlimited and in the general Black Hawk College student populations suggests that some major changes have taken place in the Study Unlimited student population since a demographic study was completed in November, 1976.[1] In this former study, it was concluded that students enrolled in Study Unlimited were, in general, older than the college's general population. Approximately 82.8 percent were aged 21 or older, and approximately 62.7 percent were aged 25 or older. These figures compared to the following for the general college population at that time: 57 percent aged 21 or older and 38.5 percent aged 25 or older. Thus, in this previous demographic study, it was concluded that the Study Unlimited student population differed significantly from the general college population in age, with Study Unlimited students being older--a well-accepted general characteristic of "new students."

Conversely, this present study revealed no significant statistical difference between the two sample populations. Approximately 66 percent of students enrolled in Study Unlimited were age 21 or older, and approximately 39 percent

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[1]Stevens, The Effectiveness of "Study Unlimited" in Serving New Student Populations in the Community.

were aged 25 or older. Thus, in approximately one year's time, age distribution for students enrolled in Study Unlimited came to resemble closely those for the general college population. With approximately 63 percent of its students aged 21 or older and approximately 43 percent aged 25 or older, the general college student population remains essentially the same in relation to age as it was one year ago. Thus, Study Unlimited students do not at this time resemble the "new student" in relation to age to any greater degree than the general college population does.

Once again, in relation to academic status, there has been a major change in the Study Unlimited student population in one year. In November, 1976, only 17.7 percent of Study Unlimited students were full-time; this study showed that at present 40 percent are full-time. In the last year, there has been some change in the general college population toward more part-time enrollment. Whereas approximately 68 percent were part-time in the previous comparative study, approximately 59 percent were part-time in this study. However, again in relation to student status, those enrolled in Study Unlimited do not as closely resemble "new students" as previously; more are full-time students.

Again, in relation to employment status, there is no statistically significant difference between students in the general college population and in the Study Unlimited student population. Approximately 52 percent of Study Unlimited students are employed full-time, and approximately 47 percent of the general college population has such an employment status. Unfortunately, results from the comparative demographic study of one year ago, because of differences in structuring of responses do not allow comparison to the present study in relation to employment status. Thus, Study Unlimited appears no more effective in serving the needs of "new students" who are full-time workers than the college as a whole does.

Similarly, the Study Unlimited program seems no more effective than all college programs in serving the needs of those who are "new students" in the sense that they have never before enrolled at Black Hawk College. Approximately 46 percent of Study Unlimited students were new to Black Hawk College; approximately 41 percent of the general college population was. A statistical analysis of these data showed no significant difference bween the two populations in this respect. In the comparative demographic study of one year age, approximately 46.3 percent of Study Unlimited students were new to Black Hawk College. Thus, there has been no

significant difference in the population of the Study Unlimited program in this respect during the last year. One year ago, however, information in relation to the general college population in this respect was not available for comparison.

Two factors may account, in part, for these changes. Because of national requirements relating to the applicability of self-paced courses not requiring regular attendance to college enrollment for qualification for veterans' benefits, during the 1977-78 academic year, veterans could only enroll in Study Unlimited courses on a limited basis if they wished to use this enrollment to satisfy V.A. requirements. Because many veterans enrolled in the college are older, part-time students and full-time workers and because a number of veterans had previously enrolled in Study Unlimited courses, their loss from the program may very well have resulted in some change in the demographic charactertistics of students. Additionally, the previous demographic study included all student enrolled in Study Unlimited, specifically those enrolled in the course to prepare for the G.E.D. examination. Because this study was restricted to those enrolled in college-credit courses only, there could be a significant change in characteristics of the students in relation to age, student status, employment status, and "newness" to the college, for most students enrolled in the course to prepare

for the G.E.D. examination are, as a whole, older, part-time students, full-time workers, and new to the college. Thus, the exclusion of this group in this study could have affected the demographic composition of the population when compared to that of one year ago.

Still, clearly, the Study Unlimited program is not serving the "new student" in relation to those characteristics to the same degree as one year ago. Although its students still tend to be older than traditional community college age, full-time workers and part-time students, and although a large number are new to the college, they do not share in such characteristics of new students any more than the college's general population.

In relation to these data, it can be concluded that Study Unlimited is not as effective as it was one year ago in opening access for those older, full-time workers and part-time students who have probably been denied access to postsecondary education in the past.

However, in three significant ways, the Study Unlimited student population differs from the general college population. First of all, there is a statistically significant difference between the two populations in relation to past level of academic achievement. Whereas approximately 17 percent of students in the general college population had scored in the lowest third on traditional tests of academic

achievement, approximately 35 percent of Study Unlimited students were in this group. Additionally, whereas approximately 10 percent of the general college population was nonwhite, approximately 16 percent of the Study Unlimited student population was in this group. Clearly, Study Unlimited serves a population that resembles Cross' "New Student" in two ways: low past academic achievement and membership in ethnic/racial minority groups. In these ways, it seems to be fulfilling its objective of opening access to those who have been previously unserved by postsecondary education.

There are two possible explanations for the situation in which Study Unlimited enrolls statistically more students with past records of poor academic achievement who are members of ethnic/racial minority groups. First of all, two public libraries participating in Study Unlimited are located georgraphically in areas with exceptionally high concentrations of minority group members. Second, the Study Unlimited student population is partially selected by one of the characteristics of its delivery system: a student may enroll in a course on almost any day of the year. Thus, it can be expected to enroll at the middle of the semester students who have been unable to perform in a traditional campus class and who must drop that class and pick up another in its place. In addition, it serves

those students who appear to enroll at nontraditional times and not at the beginning of a semester. It is possible that more students in this group may have poor past records of academic achievement than those who enroll at traditional times. Certainly, in many cases, they suggest that they are not as well aware of the traditional academic calendar nor as able to plan ahead to meet it.

Even though the Study Unlimited student population resembles Cross' "New Students" in relation to past academic achievement and membership in ethnic/racial minority groups, it does not seem to do so in relation to economic status, at least when compared to the general college population. Approximately 15 percent of the Study Unlimited population comes from households with a gross annual income of below $10,000; approximately 11 percent of the general college population does. At the same time, however, it is possible that, in comparison to student populations in other types of post-secondary institutions, both the Study Unlimited population and the general college population may be found to enroll students from a lower economic status. If such a situation is true, it is then significant that Study Unlimited enrolls also students with poor past records of academic achievement and higher memberships in ethnic/racial minority groups.

This study included a statistical comparison of both populations in relation to two other demographic characteristics, from which conclusions can not be reached so easily. First of all, Study Unlimited did not seem to be enrolling a statistically more significant number of students who achieved high school equivalency by means of the G.E.D. examination. Cyril Houle, in The External Degree, suggested that perhaps one of the largest "potential clientele" groups was those individuals who had gained high school equivalency by means of the G.E.D. examination.[1] Because of his suggestion, this study analyzed the two populations in relation to this characteristic. Clearly, Study Unlimited is not succeeding in serving such a clientele to as great an extent as the general college is doing.

Second, this comparative demographic study included an analysis of the two groups in relation to major college goal. The Study Unlimited population differed in a statistically significant way from the general college population in that fewer of its members had job-related major college goals. More students enrolled in Study Unlimited than in the general college population reported goals relating to intellectual curiousity, personal enjoyment and self-enrichment. A serious limitation of these results is the factor that there now is a large number of general education

requirement courses in the Study Unlimited program and fewer in clearly-recognizable occupational areas; this factor could serve to pre-select the Study Unlimited student population, and, accordingly, it could affect the results.

This comparative demographic study was intended to provide the basis for both a summative and a formative evluation of Study Unlimited. First, because it seems to be serving students previously under-represented in post-secondary education--especially those from ethnic/racial minority groups and those with past records of low academic achievement, it is, at least partially, fulfilling its major objectives and should be continued.

A number of recommendations based upon this study can be made in a formative evaluation. These are as follows.

(1) A greater emphasis should be placed on the recruitment of older, part-time students who are employed full-time. Such recruitment should occur in places of employment, in businesses, and from among community groups and organizations. Much more of this type of recruitment was done when the program was initiated, but the rapid increase in enrollment since that time has left little resources for or no apparent need for recruitment activities. However, if Study Unlimited is, in the long term, to meet its objectives, such recruitment should be reinstated. It can be

expected that these efforts might also result in an increase in the proportion of students enrolled in the program who have never before attended Black Hawk College.

(2) Because Study Unlimited is serving "New Students" of the type identified by Cross, especially members of ethnic/racial minority groups and those with a poor record of past academic achievement, major changes must occur in its strategies and course offerings. In Beyond the Open Door, Cross cited research suggesting the types of services that these "New Students" could be expected to request: help in developing good study skills, counseling about educational and vocational plans, help in developing reading skills, assistance in finding employment, financial aids, and counseling about personal problems.[1] At present, a course in career planning and one in developmental reading are available in Study Unlimited, although the reading skills course is definitely designed for the better reader. Part-time academic advisors and librarians themselves have offered considerable personal encouragement and academic advi ment to students in the program. However, the Study Unlimited population is clearly in need of a course in study skills

[1]Cross, Beyond the Open Door, pp. 77-78.

and in a more elementary course in reading skills. Additionally, remedial and developmental courses in writing and mathematics need to be introduced.

But, in addition, Cross challenged postsecondary education to create "new educational programs to fit New Students instead of handing down the old education of traditional students."[1] Included in her specific suggestions were a curricular emphasis on human and technological problems; different instructional strategies--including group work and sponsored experiential learning in industry and community;[2] and the "introduction of mastery learning," such as would allow "New Students" to succeed.[3] In Accent on Learning, in addition to considering new instructional strategies--such as computer-managed instruction and the personalized system of instruction--that seem especially to promise help to "New Students," Cross discusses new research in relation to cognitive styles.[4] Of special importance is her demonstration of a significant similarity between

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[1]Cross, Beyond the Open Door, p. 158.

[2]Ibid., p. 167.

[3]Cross, Accent on Learning, p. 9.

[4]Ibid., p. 112.

"New Students" and field dependents--those who are people-oriented, accepting of authority, extrinsically motivated.[1] She concludes that, if they do resemble field dependents, "New Students" might be best taught by an emphasis on personal attention, class participation, and the personal development of students.[2] Techniques that promise help to these students are the use of peer tutors and mentors, the use of audio-tutorial methods with discussion groups; and self-paced instructional methods with a small module size.[3]

Many challenges for Study Unlimited come from Cross' work, especially since its delivery system based on instructional technology is generally inpersonal and does not include much opportunity for discussion and class participation. Of course, the Study Unlimited delivery system already provides self-pacing, but all courses should be examined to ensure that work units or modules are small and that evaluation is frequent enough to provide feedback and encouragement to the student. At present, an independent study option in sociology providing the opportunity for some on-the-job and experiential learning is avilable in the program, but enrollment in this course has never been encouraged nor has

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[1] Cross, Accent on Learning, p. 123.

[2] Ibid., p. 129.

[3] Ibid., pp. 130-132.

its availability been publicized. Both should occur now so that this course can provide a basis for evaluating the use of independent study course options in the program to offer students an opportunity for experiential learning. In addition, faculty teaching in the program should be encouraged to develop learning activities that allow experiential learning or that draw upon experience. Greater emphasis and a higher priority should be placed upon the organization of library-based discussion groups, some of which have already been used, especially those in which students view or use an instructional unit and then discuss it. The "Buddy" system, in which two or more students progress through a course together, should be encouraged. Above all, Cross' study emphasizes the critical importance of the part-time academic advisor working in libraries and the personal interest and attention provided by librarians.

Roueche and Snow's recent work on developmental and remedial instruction provides additional suggestions for use in instructional strategies designed for "New Students": diagnostic testing to assess students and the availability of counseling services in learning center.[1] Accordingly,

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[1]Roueche and Snow, pp. 80-111.

it seems necessary to supplement the present work of academic advisors with diagnostic testing services, including self-concept testing. And once students with a poor self-concept have been identified, it is necessary to provide them with experiences that will raise this self-concept: success in self-paced and small instructional modules, much personal attention and encouragement, and perhaps human potential seminars at centers.

The recommendations of all these sources suggest a need to consider as a part of the Study Unlimited program a referral system to community groups and agencies, offering short-term discussion workshops and seminars, with special emphasis on technology and human relations, and well-designed instructional materials.

(3) A greater emphasisshould be placed on recruiting more students from among the pool of individuals who have gained high school equivalency by means of the G.E.D. examination. Clearly, the Study Unlimited program is not presently attracting as many of these individuals as it should. The best methods for doing so seem to include increasing enrollment and success rate in the program's course to prepare for the examination and a personal recruitment follow-up on all individuals who have recently passed the

G.E.D. examination in the college's district.

(4) The finding that at present 15 percent of students enrolled in the Study Unlimited come from household with a gross annual income of less than $10,000 suggests a continued need to provide students with information on financial aids. Librarians and academic advisors should be trained in a special workshop so that they can provide better financial aids information; all forms and information need to be made readily available at centers, with perhaps a special videocassette explaining programs and methods for completing forms for individual use in library centers; and academic advisors and librarians should assist individuals in completing applications for financial aids.

(5) Additional course offerings from obvious career fields should be made available in the program. Their availability will serve to recruit more students with job-related goals and will supplement the career counseling component of the program.

(6) The enrollment in the program of many individuals seeking learning for self-enrichment, personal enjoyment, or intellectual curiousity suggests that not all of Study Unlimited's present population necessarily wishes college-credit courses. The offering of courses in the adult continuing and basic education division should be considered,

especially since the latter will serve to assist the student who has poor academic preparation.

(7) This study suggests the need for further studies. The rapid change in the demographic characteristics of Study Unlimited students indicates a need for annual demographic studies. Future studies should include sex, geographical accessibility to campus, and sociological home background. They should also include an investigation of students' cognitive styles and the reasons for their success or failure in the program.

Within Black Hawk College and the Study Unlimited program, these recommendations will most likely be implemented if they are considered and reflected in the on-going program objectives included in the development of annual management objectives for the program. Additionally, they suggest a need for in-service training of faculty in the best way to teach adults and those with poor past records of academic achievement. This training should include units on module development, self-concept development, and the field dependent learner.

Of course, these results have no valid application beyond Black Hawk College nor either beyond or within the college at another time period. However, the results will be included in future descriptions of the program. Study

Unlimited has already been described in national publications, and it has been designated as a case study by a task force of the American Association of Community and Junior Colleges and the American Library Association, dealing with cooperative programs of public libraries and community colleges.

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APPENDIX A: DATA COMPILING SHEET

Population Group: ☐ General College Population
☐ Study Unlimited Student Population

I. FROM COLLEGE ADMISSIONS FORM -

1. Name _____
(last) (first) (middle)

2. Address _____

3. Phone _____ 4. Soc. Sec. Number _____

5. Date of Birth _____ 6. Age _____
(8/22/77)

7. Student Status
Part-Time _____ Full-Time _____

8. Employment Status
Part-Time _____ Full-Time _____ Unemployed _____

9. Ethnic/Racial Group Membership
_____Caucasian _____American Indian
_____Black _____Oriental
_____Hispanic _____Other

10. Either _____Graduated from high school
_____Completed high school by G.E.D. exam
_____Still in high school

11. New student to Black Hawk College in fall of 1977
_____yes _____no

II. FROM COLLEGE RECORDS

1. ACT score composite _____Lowest third ☐ yes ☐ no
2. High school class size _____ rank in class _____
Lowest third ☐ yes ☐ no
3. Has not completed high school _____

INDICATE A FAILURE TO RESPOND OR AN ABSENCE OF RECORDS WITH AN -0- IN THE BLANK.

III. BY TELEPHONE INTERVIEW

1. Dependent/_/ Independent /_/

2. Number of adults employed in household____

3. Number qualifying to determine parental/family income_____

4. Is income above or below $10,000

____above _____below _____refused to indicate

5. Major Reason for Attending Black Hawk College in the fall semester of 1977

____ to improve my skills for present job

____ to get a better job of one I will enjoy more

____ to prepare for employment

____ to learn more about a field(s) I'm interested in

____ to try out college on a part-time basis

____ to learn more about an area for personal enjoyment

____ to complete a college course because I've always wanted to attend college

____ to satisfy another person who has been telling me to attend college

____ to begin work in college to earn a college degree some day

Other:_____

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CLEARINGHOUSE FOR
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